

From ab4el.com Tue Aug 23 01:37:38 1994  
From: "p. irwin" <pirwin@julian.uwo.ca>  
Subject: About the antenna problem (BCLing)

The antenna problem has been clearly solved, but I think it is important to note that the signal to noise problem is very often much more serious than the signal problem on the 540-1610 kilocycle band. I had some interesting experiences with an inverted L which I wanted to be resonant at around 80 meters. I had a reasonably extensive radial system (27 radials about 10-15 meters long) and fed the antenna with coax. The primary purpose of the installation was to do some 80 meter work with my brother-in-law Bruce VE3UWL, but I also used it for some good SWLing.

One day I thought "why not try the antenna on the Scott model 300 hi-fi tuner?" I tried it and found that the noise of the BC band was substantially lower than the noise picked up by my indoor BCL loop. It had the additional advantage of not restricting the frequency response of the received signal. The signal was almost as strong based on the response of the "magic eye", but the noise was weak enough that the AGC on the tuner left the spaces on the dial between stations fairly quiet. When I disconnected the braid from the tuner the signal got much stronger, but the noise became worse than that of the loop.

Unless your house is much quieter than mine, my experience would seem to indicate that a very short (60 feet or so) semi-vertical antenna well away from obvious sources of interference is likely to be much, much quieter than the antenna and coax working together as the antenna as it does with the braid disconnected.

The BC band tends to be very noisy at night when the DX is in and I discovered that the atmospheric noise tends to overwhelm the noise sources indoors when using the loop, but it tends to be very quiet around noon so that an outdoor vertical antenna may seriously outperform an indoor loop. The ability of the loop to null out interfering signals is not particularly necessary during the daytime when co-channel and adjacent channel interference tends to be fairly low.

I know that a hi-fi tuner doesn't really qualify as a boatanchor, but perhaps it is somewhat boatanchor-related if it uses tubes. I have noticed that hardly any modern tuners do a reasonable job on the "AM" band, but a good old tube tuner can sound wonderful when someone performs live in the studio. The fact that AM broadcast stations have been transmitting signals with 10 kilocycle sidebands since the 1930s seems to be a very well kept secret. A plain old diode detector can have very low distortion if the designer cares enough about the sound.

This is my first post to any list, so I hope that I have followed the proper etiquette or at least that any breach on my part will be forgiven.

Peter Irwin  
pirwin@julian.uwo.ca

From ab4el.com Tue Aug 23 15:14:49 1994  
From: "Rhett T. George" <rtg@ee.duke.edu>  
Subject: Re: About the antenna problem (BCLing)

- Peter Irwin -  
Thanks for your antenna analysis as presented to this group. I think it quite appropriate for us lovers of boatanchors.  
Rhett George

From ab4el.com Tue Aug 23 17:30:35 1994  
From: Hugh D. Stegman <driver8@red-eft.la.ca.us>  
Subject: Re: About the antenna problem (BCLing)

Peter writes:

>The BC band tends to be very noisy at night when the DX is in and  
>I discovered that the atmospheric noise tends to overwhelm the noise  
>sources indoors when using the loop [...]

I should be this lucky. At dusk, all the photocell-operated sodium discharge \$49.95 security lamps on the block come on, and the MW noise goes up 10 dB and stays there. I think what really killed MW DX for the entertainment listener was the overcrowding of the band, PLUS the horrendous noise increase every time someone invents another wonder of technology.

>I know that a hi-fi tuner doesn't really qualify as a boatanchor

Oh, why not? We've done guitar amps, Hammond organs, tube audio, etc etc. The Marantz 10-B is a bit of a boat anchor, and still one of the 3 or 4 best tuners ever designed.

>noticed that hardly any modern tuners do a reasonable job on the "AM"  
>band

Nope. The designers don't care, because they don't think the audience does. The audience doesn't care because the FCC allowed AM to degenerate. The FCC doesn't care because PICON is dead, and the golden rule is in (the guy with the gold makes the rules), and FM is where the real numbers are.

> [...] The fact that AM broadcast stations have been  
>transmitting signals with 10 kilocycle sidebands since the 1930s seems to  
>be a very well kept secret.

Certainly explains the splatter out 15 kHz from typically overcompressed music stations. Yes, the best radio I ever had was my old field-strength meter, which had an earphone output after the diode. It was basically a crystal radio with no tuned circuit. The old KFAC AM station, which is now some kind of Spanish weirdness, sounded better than all that fancy stuff at the hi-fi store, if you ignored KNX, KFI, KABC and the Morse code markers from KPH mixed in..... :-) The point is that the oldest method can still sound very, very good. I'll take a weak AM signal over a weak FM scuzz any day.

Hugh NV6H

"dahdidah didahdahdit didididit... kinda catchy... wanna dance?"

From ab4el.com Tue Aug 23 13:36:03 1994

From: lakeith@wrdis01.robins.af.mil ( Larry CONTRACTOR Keith Mr.)

Subject: ARC-58 Info

Several folks have asked for some more information on the ARC-58 receivers. So, here is the results of my research of the Fair Radio Catalog.

The AN/TRC-75 is a 1 KW HF radio set contained in a CY-2600 case for vehicular mounting. The set covers 2-29.999 Mhz and produces AM, SSB, or tone at 400 watts (1 KW PEP). The set is made by Collins and consists of a R-761/ARC-58 receiver, T-730/TRC-75 transmitter, C-3351 Control, CU-749 Antenna Coupler, C-2848 Coupler Control, AM-2306 Amplifier, CV-786 Converter-Oscillator, RF-111 Load Coil and a built in wattmeter. The set requires 115V, 400 Hz, 3 phase power. Fair also includes a PP-2352 Inverter that will provide the AC power from a 28 volt, 110 amp source. Weight is 375 lbs and the unit measures 20x48.5x30.5 inches.

The T-730/TRC-75 Transmitter functions as a 1 KW PEP (400 watt AM or SSB) linear power amplifier when used with the R-761/ARC-58 receiver which supplies 200 mW PEP input drive. This unit uses three 4CX250 tubes in the Power Amplifier and is tuned by servo amplifiers and motors. Requires 115 volts, 400 Hz, 3 phase and provides outputs of 2000VDC (300 ma), 400 VDC, 6.3 VAC, -40 to -80 VDC, and 115 volts, 400 Hz, 1 phase for the servo motors. Also uses 6CL6 and 5896 tubes. C-3141 control is required for channel selection. Weight is 55 lbs and the unit measures 7.8x10.3x24 inches.

The R-761/ARC-58 Receiver is the companion receiver and exciter to the T-730 transmitter. Requires 115 VAC, 400 Hz

power input. C-3141 Control is required for frequency selection. Weight is 55 lbs and the unit measures 7.6x10.3x23.5 inches.

The C-3141/TRC-75 Control Box for the T-730/TRC-75 provides on/off, channel and mode selection, and gain control for the receiver and transmitter of the TRC-75. Appears to be usable with the ARC-58. Requires 27 VDC. Weight is 6 lbs and the unit measures 5.3x5.8x7 inches.

The CU-749/TRC-75 Automatic Antenna Coupler is a Collins manufactured unit that operates from 2 to 29.999 Mhz and is rated at 400 watts, 1 KW (PEP). Has a 30 second maximum tune time. This unit contains a 5-465 pf 5 KV vacuum variable capacitor, a RB3-26 style vacuum relay, a CV-531 loading discriminator and a 115 VAC 400 Hz motor driven variable ribbon inductor. A type N connector is provided for the antenna feedline. Control voltages are supplied by the C-2848 Coupler Control. Weight is 25 lbs and the unit measures 9.5x7.17.8 inches.

The C-2848/TRC-75 Coupler Control weighs 14 lbs and measures 7.8x3.7x14.5 inches.

The RF-111/TRC-75 Loading Coil electrically increases the length of a whip or long-wire antenna. Consists of two fixed coils, 30 uH and 15 uH, and two 26 VDC SPDT RE-6B 25 KV @ 25 Amp vacuum relays. Weight is 12 lbs and the unit measures 7.6x16.3x9.1 inches.

The PP-2352/UR Electronic Inverter provides 115 VAC, 400 Hz at 1.4 KW continuous (2.5 KW intermittent), 3 phase with 1 phase sinewave. Input is 28 VDC at 110 Amps. Weight is 52 lbs and the unit measures 7.6x7.8x19.5 inches.

73,

Larry, KQ4BY

From ab4el.com Mon Aug 22 18:33:02 1994

From: "Stephen M. Linscott" <LINSBOT@RICEVM1.RICE.EDU>

Subject: ART-42A Manual

I'm still looking for a manual for the "beast". All leads so far have produced nothing. The ART-42A is a large VHF airborne transmitter, about 2 KW out. I hate to strip it for parts, but can't figure out what kind of control head it requires. Can anyone help? Thanks!

- Steve -

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*****
*   Steve Linscott      W5EGP      *
*   Office of Computing Services    *
*   Rice University      *
*   Houston, TX          *
*****
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From ab4el.com Tue Aug 23 19:19:16 1994  
From: "Mark Glusker" <glusk@mechcad3.esd.sgi.com>  
Subject: BC312 manual at Powell's

Just saw this on the Powells Technical Bookstore Mosaic server:

'Technical manual radio receivers bc 312 bc 314' by War Dept  
Published: WAR D 1942 ISBN:6001045674  
Subject: Radio (08/26/1993)  
In Stock: 1 @ \$10.00 (Used,Paper)

Orders (800) 225-6911  
Fax (503) 228-0505.  
e-mail orders@technical.powells.portland.or.us.

I have no affiliation with Powell's.

From ab4el.com Fri Aug 19 22:42:53 1994  
From: TOM.A.ADAMS@mail.admin.wisc.edu  
Subject: Cheap 211 Triodes

to: boatanchors@gnu.ai.mit.edu

Well, a 79 cent 211 was a pretty good deal, but the thing that drove ME nuts back then was the fact that I got started in surplus too late to get hold of the 59 cent 304TLs !

I've got a small stash of them here now, tho they're probably too old and gassy to use.

They'll make really spectacular bases for table lamps.

Mr. T.

From ab4el.com Fri Aug 19 22:58:47 1994  
From: TOM.A.ADAMS@mail.admin.wisc.edu  
Subject: Chicago Lots

to: boatanchors@gnu.ai.mit.edu

Greetings J.D., K1ZAT.

Re. Chicago city lots;

Bingo, you guessed it, South Side it is. More specifically, in the middle of Englewood.

It was an OK area back when I was a kid, but now it's a hole. My father recently passed away, and now we're in the process of moving my mother out.

I was down there a couple of weeks ago, and was rather amused to see one of my old end insulators still hanging from a climbing spike on the telephone pole out back!

Mr. T.

From ab4el.com Fri Aug 19 20:12:01 1994  
From: wizard@celestat.com  
Subject: Collins KW-1 for sale

I am looking for a good home for my KW-1 serial #82. I am 3rd owner. The rig is in excellent cond. Please respond to wizard@celestat.com and I will give u my phone#. Domestic inquiries only.

Chuck WA1IIE

From ab4el.com Tue Aug 23 18:56:12 1994  
Subject: Fw: (fwd) Heath 2'er for sale  
From: lakeith@wrdis01.robins.af.mil ( Larry CONTRACTOR Keith Mr.)

(forwarding comment)

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And another one from the swap newsgroup;..

73,

Larry

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-----  
(original message follows)

Path: wrdis02.robins.af.mil!aus1.lu.robins.af.mil!mane.cgrg.ohio-state.edu!  
math.ohio-state.edu!news.acns.nwu.edu!news.eecs.nwu.edu!fidogate.nuars.nwu.edu!  
f511.n115!f738.n115!f119.n115!f747.n115!Jeffrey.L.Bauman  
Newsgroups: rec.radio.amateur.equipment  
Distribution: world  
X-Comment-To: All <All@f511.n115.z1.fidonet.org>  
>From: "Jeffrey L. Bauman" <Jeffrey.L.Bauman@f747.n115.z1.fidonet.org>  
Date: Mon, 22 Aug 94 03:11:48 -0500  
Subject: Heath 2'er for sale  
Message-ID: <777525108@f747.n115.z1>  
Organization: Via RHO! \* 708.238.1901. fname.lname@radiohobby.chigate.com  
X-FTN-AREA: RADIO.AMTR.EQUIPMENT  
X-FTN-SEEN-BY: 115/2 5 108 118 119 278 410 511 738 747 766 887  
X-FTN-PATH: 115/747 119 738  
Lines: 8

Heathkit Two'er \$25.00

Benton Harbor Lunchbox in Excellent physical condition ... no  
mods! Audio hum on receive. With original manual, no mic.

Call Jeff, (810) 855-9209  
WB5KZW

From ab4el.com Tue Aug 23 19:13:03 1994  
Subject: Fw: (fwd) Johnson Ranger for Sale  
From: lakeith@wrdis01.robins.af.mil ( Larry CONTRACTOR Keith Mr.)

(forwarding comment)  
-----

An interesting item from rec.radio.swap...

73,

Larry, KQ4BY  
  
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(original message follows)

Path: wrdis02.robins.af.mil!aus1.lu.robins.af.mil!mane.cgrg.ohio-state.edu!  
math.ohio-state.edu!news.acns.nwu.edu!news.eecs.nwu.edu!fidogate.nuars.nwu.edu!  
f511.n115!f738.n115!f119.n115!f747.n115!Jeffrey.L.Bauman

Newsgroups: rec.radio.amateur.equipment  
Distribution: world  
X-Comment-To: All <All@f511.n115.z1.fidonet.org>  
>From: "Jeffrey L. Bauman" <Jeffrey.L.Bauman@f747.n115.z1.fidonet.org>  
Date: Mon, 22 Aug 94 03:10:44 -0500  
Subject: Johnson Ranger for Sale  
Message-ID: <777525044@f747.n115.z1>  
Organization: Via RH0! \* 708.238.1901. fname.lname@radiohobby.chigate.com  
X-FTN-AREA: RADIO.AMTR.EQUIPMENT  
X-FTN-SEEN-BY: 115/2 5 108 118 119 278 410 511 738 747 766 887  
X-FTN-PATH: 115/747 119 738  
Lines: 17

EF Johnson Viking Ranger Transmitter - \$125

Vintage AM transmitter, covers 160 through 10 meters with 75 watts CW, 65 watts plate modulated AM. Built in VFO. Uses a 6146 final.

A two-position switch has been (tastefully) added to this transmitter on the front panel ... haven't looked inside to see what it's supposed to do.

The cabinet needs repainting, as does portions of the front panel. However, it works beautifully. Original Manual.

Call Jeff (810) 855-9209  
WB5KZW (Near Detroit)

From ab4el.com Tue Aug 23 20:16:48 1994  
From: post@ouvaxa.cats.ohiou.edu  
Subject: Have Manuals, will trade copies

Ohio University Electronic Communication

Date: 23-Aug-1994 05:22pm EST

To: Remote Addressee  
( \_MX%"boatanchors@gnu.ai.mit.edu" )

From: Richard Post  
Services  
POST

Dept: Instructional Media  
Tel No:

Subject: Have Manuals, will trade copies

Several heavy metal lubbers/ luggers have asked for manuals to a variety on oldies but goodies. Herewith a list of mine. Xerox COPIES of the following manuals can be arranged on an exchange basis for your copies.

HAVE the following manuals

Heathkit

AR-3 Communications receiver  
AR-13A AM-FM receiver  
ET-3200 Digital design Experimenter  
GR-481 color tv (tube type)  
GRA- 227-6, 295-6, 681-6 TV remote control  
GR-900 color tv (condensed manual)  
GR-88 VHF monitor receiver  
GD-51A wireless intercom  
HW-29A 6 meter transceiver  
HD-10 Electronic keyer  
HD-1424 Active antenna  
IM-11 VTVM  
IM-13 VTVM  
IM-28 VTVM  
IM-30 transistor tester  
IM-1210 Digital multimeter  
IM -2410 Freq counter  
PS-3 Variable Regulated Power Supply  
SG-8 Signal generator  
T-3 Signal tracer  
LG-1 Lab signal generator  
TC-2 Tube checker

B&K 470 pix tube rejuvenator  
EICO 324 signal generator  
Meissner Analyst model 9-1040 (the one with 5 tuning eye tubes!)  
Multi-Elmac AF-67 Transciter

Hallicrafters - The following are operating instructions/ service data. Most are 4 to 12 pages and include schematics.

S-20 Operating instructions  
S-20 Alignment procedure  
S-38D Mark 1A, Mark 1B, Operating and service instructions  
S-38 E-EB-EM Mark 1A, Mark 2 service data  
S-40 Installation and operating instructions  
S-40 Service bulletin No.1  
S-53A / S-53AU run 2; Operating and service instructions  
S-107 Mark II service data

S-119 Operating and service instructions  
S-120 Service data

NEED copies of the following manuals / operating instructions  
National NC-200 (NC-2-40D is close enough to be useful)  
National NC-300, (NC-303 is close enough to be useful)  
National NC-88  
Hallicrafters SX-110,  
Hallicrafters SX-36 or 36A  
Hallicrafters SX-19B  
Heathkit #4100 EIA 416 Frequency counter  
Heathkit GR-64 Communications receiver  
Heathkit IM-2A Impedance bridge  
Multi-Elmac PMR-8 receiver (PMR-6 or 7 is close enough to be useful)  
Eico 710 grid dip meter  
Echophone EC-1  
Radiomarine AR8509-FCC  
Learavian RM 402C  
BC-348 (need Q but others will do),  
BC-224 (need D but others will do),  
BC-312,  
BC-639 or 639A (also listed as AR95610-1)  
Lafayette HE-40 Communications receiver  
B&K 501A Semiconductor curve tracer  
B&K 460 scope  
Sprague TO-4 Tel-O-Mike capacitor checker (similar models will do)  
URM25D signal generator (similar models may be useful)

If you need one of mine copied but don't have something I need, tell me what manuals you've got. We may still be able to work a copy swap. Also have most Rider's Perpetual Troubleshooters manuals, many Beitman's "Most Frequently Needed" schematic sets, and one of the Editors and Engineers CQ Surplus Schematics Handbook.

Please do not spread this list beyond Boatanchors without checking with me first. Thanks. Let's swap copies!

Rich Post KB8TAD  
post@ouvaxa.cats.ohiou.edu

Received: 23-Aug-1994 05:23pm

From ab4el.com Mon Aug 22 11:27:41 1994  
From: "Thomas M. Alverson" <TOMA@s1.xetron.com>

Subject:           How do I clean an old Morse Code key?

I picked up an old Morse Code key at the Cincinnati hamfest yesterday (looks like a J-38, but has no model # on it). I have been trying some grocery store copper/stainless/brass/etc cleaning compound on it, but it seems to have had a laquered finish on top of the brass that is very hard to get off. Is there some secret to cleaning these? All parts are brass except for the arm itself, which appears to be plated steel.

Thanks -- Tom

btw, Cincy hamfest was pretty good this year - fair number of boatanchors there.

From ab4el.com Tue Aug 23 05:24:50 1994  
From: Paul (GW7KES) <pdu@unixa.nerc-barry.ac.uk>  
Subject: Re: How do I clean an old Morse Code key?

Well, I'm not sure if its the same problem, but my Dad bought a 70' narrowboat and it has several brass portholes. These looked horrid, and I was determined to clean them up so I got some brasso and cloths and scrubbed for hours - with absolutely no effect. Some weeks later I went to the Chester Boat Rally, and was shown the secret to getting really mucky brass clean. The toothbrush! Get an old toothbrush and use that to scrub in the brasso, and although it takes time it does work.

73, and I hope it works for you,

Paul, GW7KES.

From ab4el.com Sun Aug 21 02:02:33 1994  
From: glitwin@craysea.cray.com (Gary Litwin)  
Subject: HT-41 manual and FOX TANGO newsletters wanted..

Hello, Anchor folks!

I am trying to help out a friend who has been very nice to me.

He is looking for a manual for a Hallicrafters HT-41 Linear Amplifier, or schematics or what have you.

He is also very interested in a set of newsletters for the YEASU product line called the "FOX TANGO" notes or something similar.

Originals or copies thereof would be greatly appreciated!

I will be "GONE CAMPING!" for the next week, so if I don't reply until next weekend, please don't think me rude!

All the best,

Gary Litwin  
glitwin@craysea.cray.com

From ab4e1.com Tue Aug 23 20:08:10 1994  
From: KANAMAA%AMGATE%MATRXA@randb.abbott.com  
Subject: Immmmm Baaaaaack

>From: Kana, Michael (D9CY)  
Date: Tue, Aug 23, 1994 4:52 PM  
Subject: Immmmm Baaaaaack  
To: boatanchors  
Howdy All

Well, looks like we got the routing thing fixed so I should be on boatanchors again. Hope I didnt miss too much.

MOO!  
Mike AA9IL

From ab4e1.com Wed Aug 24 19:10:09 1994  
From: bstrang@iac.net (Bill Strangfeld)  
Subject: Inquiry

From ab4e1.com Tue Aug 23 13:49:06 1994  
From: Nick England <nick@cs.unc.edu>  
Subject: Johnson ant relay connector ?

For some reason that certainly seems to elude me, the Wizards at E.F.Johnson decided to use a small cristal socket (HC-6/U? HC-23/U?) for the 115vac connection for the antenna changeover relay on the Ranger, Valiant, etc.

Does anyone have a good suggestion for a mating connector? So far I have been destroying crystals in order to fashion a male connector but:  
a) I'm running out of not-too-useful crystals  
b) this just seems tacky

I have to rank this right up there with the line cord socket Hammarlund selected for the mute line (B+ interruption) on the HQ-110, 170, etc.

Let's see, I can plug a crystal into 115vac on the back of my Ranger,  
plug the Dow-Key relay's mute contacts (normally closed) straight into  
115vac, and plug my Valiant in series with the HQ-110 B+ line.  
Kids, don't try this at home.

Nick KD4CPL  
nick@cs.unc.edu

From ab4el.com Wed Aug 24 02:24:05 1994  
From: "Kenan, Larry" <larryk@frick.sandiegoca.NCR.COM>  
Subject: Re: Johnson ant relay connector ?

>For some reason that certainly seems to elude me, the Wizards at  
>E.F.Johnson decided to use a small crstal socket (HC-6/U? HC-23/U?) for  
>the 115vac connection for the antenna changeover relay on the Ranger,  
>Valiant, etc.

>Does anyone have a good suggestion for a mating connector?

>Nick KD4CPL

The pins from a wire wrap IC DIP socket fit in the Johnson crystal socket OK.  
I had a DIP riser (just the pins passing through the plastic base) that had the  
proper spacing after the extra pins were removed, so I just connected the wires  
to that and taped the exposed connections up. You could also fabricate a  
connector with the pins from a wire wrap DIP socket and a small piece of  
plastic.

Never plug in or unplug this connector when the transmitter is plugged in to the  
power line. With the standard Johnson two prong fused plug it may not be the hot  
side of the line which is switched.

Larry Kenan - KD6CKR

From ab4el.com Wed Aug 24 10:19:51 1994  
From: "Roy Morgan" <morgan@speckle.ncsl.nist.gov>  
Subject: Re: Johnson ant relay connector ?

On Tue, 23 Aug 94 15:56:59 pst,  
Kenan, Larry <larryk@frick.sandiegoca.NCR.COM> wrote:

>Never plug in or unplug this connector when the transmitter is plugged in to the

>power line. With the standard Johnson two prong fused plug it may not be the hot  
>side of the line which is switched.

Or better yet: replace the two-pronged line cord with a three pronged one,  
and put one nicely mounted fuse inside the cabinet in the hot (black) line.

-- Roy --

Roy Morgan / Tech A-266 / NIST / Gaithersburg MD 20899  
301-975-3254 Fax: 301-948-6213 Internet: morgan@speckle.ncsl.nist.gov  
---

From ab4el.com Wed Aug 24 13:40:12 1994  
From: Nick England <nick@cs.unc.edu>  
Subject: Re: Johnson ant relay connector ?

I'll try Larry KD6CKR's suggestion of a wire-wrap header.

I looked up the connector in an old Johnson catalog and sure enough they  
did make a mating connector #111-99. I'll keep my eyes open for some.  
.051" pins spaced .486" apart (nice round numbers)

I'll also look at the Radio Shack 300 ohm twin-line connector but I suspect  
the pins may be too large (a tip of the hat to John WA1ABI)

and I appreciate those who pointed out the trade-off between historical  
accuracy and electrocution.

thanks, fellow boat-anchors,  
Nick KD4CPL

From ab4el.com Wed Aug 24 15:57:06 1994  
From: Nothing in moderation...! <brewer@anarky.enet.dec.com>  
Subject: Johnson connector

I have found several of those widowmaker ceramic connectors  
for the changeover voltage on EFJ xmtrs, in the crystal bins  
of my local junkie emporium. YES! They are goofy, AND they  
have a habit of slipping out as the retention force of the mating  
piece is low....

still, it IS nice to have the authentic piece, even if it IS  
swathed in electrical tape!  
/john wb5ou

From ab4el.com Mon Aug 22 14:43:12 1994

From: JosephWP@aol.com

Subject: Manuals needed

I am looking for tech manuals for the following:

BC-950 (WWII VHF transmitter)

PRC-36

RT-1113/PRC-68

RT-1113A/PRC-68

SG-1144

ARC-58

ARC-39

AM-6669

AM-447

Gates Dynamote

Any help will be really appreciated.

Joseph Pinner +

Lafayette, LA

KC5IJD

From ab4el.com Tue Aug 23 19:39:16 1994

From: lakeith@wrdis01.robins.af.mil ( Larry CONTRACTOR Keith Mr.)

Subject: Military Surplus - For Sale - Ver 2.

I have the following items to sell or trade:

ARC-58 Receiver Units. The R-761/ARC-58 Receiver is the companion receiver and exciter to the T-730 transmitter. Frequency coverage is 2-29.999 Mhz. Requires 115 VAC, 400 Hz power input. C-3141 Control is required for frequency selection. Weight is 55 lbs and the unit measures 7.6x10.3x23.5 inches. Very Good Condition. Some are still in the shelf pack. \$75 each or 3 for \$200.

T-437/APX-37. Fair Condition \$50 each or 3 for \$125.

618T-2 Transceivers. 2-29.999 Mhz, SSB-AM-CW in 28000 channels. Power input is 400 watts PEP for SSB, 125 watts AM or CW. Output impedance is 52 ohms, Audio input impedance is 600 ohms. Uses two 4CX250 in Power Amplifier. Separate control box is necessary for channel select. Requires 115 VAC 400 Hz 3 Phase @ 1 KVA and 1 Phase @ 160 VA as well as 28 VDC @ 4.5 amps. Weight is 58 lbs

and the unit measures 7.6x10.1x22.2 inches. Fair condition, no power amplifier modules. I have been told that these have the filters needed to convert a PRC-47 to LSB. \$50 each or 3 for \$125.

RT-759/ARC-112. Fair Condition. \$60 each or 3 for \$150.

RT-736/ASQ-88. Fair Condition. \$60 each or 3 for \$150.

Bird 8135 "Coaxial Resistor" dummy load. Rated at 150 watts, 50 ohms. N-connector input. \$50.

Lambda 0-36V, 0-25A Power Supply, Fair condition. \$100.

Lambda 0-20V, 0-5.7A Power Supply, Poor condition (meters broken). \$75.

RT641B/ARC-90. Fair condition. \$60 each or 3 for \$150.

PP-112/GR Power Supply. Fair Condition. \$50.

KY-312/ASQ-19. Fair Condition. \$60 each or 3 for \$150.

TV-7/D and /U tube testers. Fair condition, Some may be missing covers and adapters, no manuals. \$50 each.

DA-43/U Dummy Load/Wattmeter. Has series capacitance MMF selector for 100-200-300-400-OUT for switching four CRL 851 100 pf 7500 Volt capacitors. Also, selector for Series Resistance Ohms to allow switching of 4-8-10-30-40 70 watt resistor bank. With 0-100 watt meter, cooling fan, and power cable. Requires 28 VDC. Weight is 17 lbs and the unit measures 9.5x12x8.5 inches. Unused, new condition, no manuals. \$50 each.

AN/URM-32A Frequency Meter. Looks good but sold as used-repairable. \$60 each.

TS-323/UR Frequency Meter. Looks kind of like a BC-221. U.S. Navy markings. With Calibration Book. Looks good but sold as used-repairable. \$50 each. Only one!

HP-410B VTVM Looks fair, used-repairable. \$50 each.

HP-410B VTVM Rack Mount Version. Looks fair, used-repairable. \$60 each.. Only one!

All items are used, not checked. I do not have any tech data on this stuff. Prices do not include shipping.

If you are interested, please e-mail me. Please include your zip code so that I can estimate the shipping.

73,

Larry , KQ4BY  
lakeith@wrdis01.robins.af.mil

From ab4el.com Fri Aug 19 12:35:18 1994  
From: Emil Switzer <SWITZER+\_E%A1%Electromagnetic\_Sciences@mcimail.com>  
Subject: MORE BA PLACES

TO: BOATANCHORS

THANKS TO ALL WHO RESPONDED TO MY REQUEST FOR BA PLACES IN SILICON VALLEY.

I AM GOING TO BE HEADING FOR THE BOSTON, MA AREA NEXT WEEK. ANY GOOD BA PLACES THERE OR IN SOUTHERN NH.

73

EMIL W1GGM/4

From ab4el.com Mon Aug 22 19:42:29 1994  
From: don merz <71333.144@compuserve.com>  
Subject: More Wanted

WANTED

CONTACT: Don Merz, 47 Hazel Drive, Pittsburgh, PA 15228  
412-234-8819 (weekdays, EST).

WANTED: HALLICRAFTERS HT-4 (military BC-610) PARTS

BC-610 or HT-4 coils: 51C383 (1.5-2.0mhz), C-387-D (2.0-2.5mhz) and C-388-C (3.5-4.5mhz)

BC-610 or HT-4 tuning unit: TU-AA (1.5-2.0mhz)

BC-610 or HT-4 vacuum capacitor: This is C28 that mounts in 2 clips in the top of the BC-610 and HT-4 transmitter. It is a large glass cap with a value of 55mmf at 32,000 volts.

Hallicrafters cable part #87A159 or similar. This is the cable that runs between the HT-4 transmitter and the HT-5 speech amplifier.

WANTED: TUBES (or prices)

I need the following tubes. If you don't have them, can you tell me what I should expect to pay for each, say new-in-box or used/good?

47  
307A  
801  
803(need 3)  
812(need 3)  
837  
5647(need 10)  
5899(need 3)  
5Z3 (need 3)  
2A3]  
100TH  
1616 (need 2)

From ab4el.com Mon Aug 22 09:42:22 1994  
From: dennis@irissun2.fp.trw.com (Dennis Gibbs)  
Subject: Need help with antenna problem

<>

Greetings,

I spent this past weekend cleaning up the shack and rearranging my boatanchor receiver collection. While reconnecting my antennas, I noticed something strange that I could not explain. I am hoping that some antenna expert out there could explain what is happening. Here is a description of the antennas involved, followed by a description of the problem:

I have two antennas (among others) installed in my attic. They are an Alpha-Delta DX-EE dipole, and an Eavesdropper dipole. The Alpha-Delta is mounted horizontally along the Apex of the roof, whereas the Eavedropper is mounted in an "inverted V" configuration. Both antennas have SO-239 connectors on them. I am using for each antenna a 100 foot length of Belden 9913 Coax, with factory installed PL-259 connectors on each end. I run the coax through a 4 inch PVC pipe that goes from my attic into the basement to my radio room.

I was in the process of connecting the antennas to my HRO-60 and my R-388 receiver. At the time, I had both receivers tuned to the AM broadcast bands (around 1500 KHz). What I noticed is that the signal strength on the received station decreased dramatically when the outer shell was screwed onto the connector of the receiver. In

other words, if I touched only the center conductor of the Coax to the center conductor on the SO-239 antenna connector, the signal was much stronger, perhaps by about 30 DB or so!

This was consistent with both antennas, and both receivers. However, I noticed that when I tuned to a higher SW band, like around 15.000 MHz, this phenomenon did not occur. In fact, the signal may have been very slightly stronger when the connector was screwed all the way on.

I also noticed, when tuned to the AM broadcast band, that the noise level dropped noticeably when the connector was completely on. But I don't know whether this is because the signal strength dropped so much or if it is because the coax shield works when connected to the receiver.

I don't know if this makes a difference or not, but both receivers had three-wire AC plugs, and IN ADDITION were connected to a good earth ground (8 foot copper rod hammered 6 feet into wet soil). Also, my ohmmeter does NOT indicate a short between the center conductor of the coax, and the shield.

Does anyone have an explanation for this? Why does the signal strength go down so much when the coax shield is connected? Help?

BTW, has anyone received their August 1994 Electric Radio yet?

Dennis Gibbs  
dennis@irissun2.fp.trw.com

From ab4el.com Mon Aug 22 11:28:22 1994  
From: "Rhett T. George" <rtg@ee.duke.edu>  
Subject: Re: Need help with antenna problem

Reply to: Dennis Gibbs

Here is my best guess. The antenna input impedance at low (BC band) frequencies is high on both of your receivers. Thus your long, single wire antenna (center conductor only connected) delivered a lot of signal and noise. As the bandswitch is changed to the higher frequencies, the impedance goes down and at 15 MHz there is a better match to 50 ohms than to a high impedance.

Rhett George

From ab4el.com Mon Aug 22 12:28:17 1994  
From: janderson@polycom.com

Subject: Re: Need help with antenna problem

Dennis:

My August ER arrived Friday.

Your antenna problem is an interesting one - I've noticed the same phenomena myself at higher frequencies when connecting coax that has NO antenna at the other end, so you might check that the coax isn't open (rather than shorted). You can do this by shorting shield to center conductor at the ANTENNA side, then checking with an ohmmeter in the shack to verify that the short exists.

Also, verify that your connections from coax to antennas are good - although if both antennas exhibit the same phenomena, then I doubt that this is the problem.

It's also possible that your antennas are simply very mistuned (inefficient) at Broadcast frequencies. You might want to try an antenna tuner between the antennas and the receiver. Any good ham radio tuner should work (like those made by MFJ), although, admittedly, the broadcast band is below the lowest ham band - possibly a tuner can't tune down this far.

Personnaly, I'd add a third antenna to my collection. Simple run a piece of bare wire up the pipe to the attic, and connect it to the center pin of a coax connector that then plugs into the receiver - this should replicate your "unconnected shield" antenna and thus provide excellent broadcast band pervformance..

Let me know what you discover...

- Jeff, WA6AHL

From ab4el.com Mon Aug 22 14:32:18 1994  
From: dennis@irissun2.fp.trw.com (Dennis Gibbs)  
Subject: Re: Need help with Antenna Problem

Hello again everyone,

Well, several people came up with a good explanation for the antenna problem I posted earlier this morning. Doug Snowden explained it best.

Essentially, I "forgot" that the DX-EE antenna works well only down to about 40 meters or so, and the Eavesdropper

works well only down to about 90 meters. So both antennas are very inefficient on the AM BCB.

When I removed the outer shell from the antenna connector on the back of the receivers, this effectively caused the Coax to become part of the antenna. Since I had 100 feet of Coax, this made for a much better AM BCB antenna, hence a big improvement in signal strength.

Since these two antennas work well on the International broadcast SW bands, this phenomenon was not observed since the antenna is already a good match for the receiver for those frequencies.

Thanks for all the quick and helpful responses. I guess I overlooked the obvious answer.

Dennis Gibbs  
dennis@irissun2.fp.trw.com

From ab4el.com Mon Aug 22 15:22:47 1994  
From: censun1!gc@uunet.uu.net (Gary Chatters)  
Subject: Re: Need help with antenna problem

Dennis,

I'll try an explanation.

>

>I have two antennas (among others) installed in my attic. They  
>are an Alpha-Delta DX-EE dipole, and an Eavesdropper dipole. The

I am not familiar with these two antennas, but I would guess they are a bit short for listening at 200meters.

[...]

>I was in the process of connecting the antennas to my HRO-60 and  
>my R-388 receiver. At the time, I had both receivers tuned to the  
>AM broadcast bands (around 1500 KHz). What I noticed is that the  
>signal strength on the received station decreased dramatically when  
>the outer shell was screwed onto the connector of the receiver. In  
>other words, if I touched only the center conductor of the Coax to  
>the center conductor on the SO-239 antenna connector, the signal was  
>much stronger, perhaps by about 30 DB or so!

>

>This was consistent with both antennas, and both receivers. However,  
>I noticed that when I tuned to a higher SW band, like around 15.000

>MHz, this phenomenon did not occur. In fact, the signal may have  
>been very slightly stronger when the connector was screwed all the  
>way on.

When you have just the center conductor of the coax connector connected, the coax is acting as part of the antenna. In effect you have sort of a random wire vertical (if most of the coax is vertical going to the attic) top loaded by the dipole. You would have an awfully tall house for 100' of coax but the general idea applies.

This random wire antenna is better at 200 meters than the coax fed dipole. When you connect the outer shell of the coax connector you have effectively reconfigured the antenna to be a coax fed dipole.

Polarization might be a contributing factor since AM broadcast is vertically polarized.

>  
>I also noticed, when tuned to the AM broadcast band, that the noise  
>level dropped noticeably when the connector was completely on. But  
>I don't know whether this is because the signal strength dropped so  
>much or if it is because the coax shield works when connected to the  
>receiver.

Use your S meter to compare changes in strength of noise vs. signals. I'd guess that the changes are about the same, so it would be due to the change in antenna configuration. A lot of noise in the broadcast band is supposed to be vertically polarized so there might be an additional effect there.

>  
>I don't know if this makes a difference or not, but both receivers  
>had three-wire AC plugs, and IN ADDITION were connected to a good  
>earth ground (8 foot copper rod hammered 6 feet into wet soil). Also,  
>my ohmmeter does NOT indicate a short between the center conductor of  
>the coax, and the shield.  
>

Well, a good ground should make the "random wire quasi-vertical" work even better.

Anyone else want to contribute to the discussion?

Gary

From ab4el.com Mon Aug 22 15:45:40 1994

From: Tony Germanotta <german@infi.net>  
Subject: Re: Need help with antenna problem

On Mon, 22 Aug 1994, Dennis Gibbs wrote:

> <>  
>  
> Greetings,  
>  
> I spent this past weekend cleaning up the shack and rearranging  
> my boatanchor receiver collection. While reconnecting my antennas,  
> I noticed something strange that I could not explain. I am  
  
> What I noticed is that the  
> signal strength on the received station decreased dramatically when  
> the outer shell was screwed onto the connector of the receiver. In  
> other words, if I touched only the center conductor of the Coax to  
> the center conductor on the SO-239 antenna connector, the signal was  
> much stronger, perhaps by about 30 DB or so!  
>  
> This was consistent with both antennas, and both receivers. However,  
> I noticed that when I tuned to a higher SW band, like around 15.000  
> MHz, this phenomenon did not occur. In fact, the signal may have  
> been very slightly stronger when the connector was screwed all the  
> way on.

I'm no antenna expert, but I think what is happening here is you are adding that 100-foot run of coax to the antenna, creating a long-wire of sorts that is more efficient at MW frequencies than the SW trap antennas in the attic. Connect the outer shield to ground and it prevents the lead in from acting as part of the antenna. That, by the way, also helps limit local house noise from appliances, wiring, etc, from getting into the RF inputs which explains why the SW antennas are quieter when you have them connected as designed.

If noise isn't a major problem, then figure out a way to switch the ground braid in and out of the system and enjoy the best of both worlds.

Hope I'm not too far off with this. I defer to the experts on this list for detailed explanations.

Good luck.

> > > Dennis Gibbs  
> dennis@irissun2.fp.trw.com

>

Tony Germanotta, staff writer, The Virginian-Pilot, Norfolk, Va.

-----

Blame no one else for the opinions I don't have.

e-mail: german@infi.net

phone: (804) 446-2276

address: 150 W. Brambleton Ave, Norfolk, Va., 23501

From ab4el.com Mon Aug 22 16:34:23 1994

From: al511@freenet.HSC.Colorado.EDU (Robert Neece)

Subject: Re: Need help with antenna problem

Dennis Gibbs wonders why his attic dipoles work better on the broadcast band when the outer shields of the coaxial cables that feed the antennas are disconnected.

Two things are happening:

1. When the coax shield is not connected, and only the center conductor is connected, the coax becomes not a feedline but, rather, part of the antenna itself.

This results in an improvement at 1500 kc. because the antenna to which the coax is connected is so short relative to the wavelength involved that, by itself, it is very inefficient. The additional length provided by the coax improves the antenna at low frequencies.

At higher frequencies, the antennas in his attic are closer in size to the wavelength of the received signal, so the addition of the coax to the antenna does not afford the same advantage as on the broadcast band.

2. By disconnecting the shield, and thereby causing the coax to become a part of the antenna, the antenna (owing to the physical orientation of the coax) becomes primarily vertically polarized. Many (perhaps most) man-made noise sources are also vertically polarized. Accordingly, his antenna becomes a more efficient receptor of noise. Moreover, vertical polarization is more effective for surface-wave signals that are common at low frequencies.

His attic dipoles are horizontally polarized antennas. They

will be less receptive to noise and less efficient with respect to signals propagated along the earth's surface rather than by ionospheric refraction. At 15 Mc., though, most signals will be propagated by the ionosphere. Thus, having the coax become part of the antenna at that frequency either will be no advantage or, as Dennis observes, will become a disadvantage.

Bottom line: What Dennis has observed is entirely to be expected given the setup he has. No problem. Therefore, no cure is needed. Disconnect the shield, Dennis, when you want to listen on 1500 kc.

--

73 de Bob, K0KR

From ab4el.com Fri Aug 19 10:17:49 1994  
From: "Tom Alverson" <TOMA@s1.xetron.com>  
Subject: Need Plate Cap glue recommendation

I have a 6146 that has lost it's plate cap. I removed one from another tube and was thinking of just soldering it to the little stub of wire still coming out of the 6146, but I suspect there is some kink of glue I could also use that would stick to the glass and be able to take the heat. Any recommendations?

Tnx

de Tom NU8D

From ab4el.com Mon Aug 22 14:34:17 1994  
From: KANAM%AMGATE%MATRXA@randb.abbott.com  
Subject: R390A restoration info

>From: Kana, Michael (D9CY)  
Date: Mon, Aug 22, 1994 11:01 AM  
Subject: R390A restoration info  
To: boatanchors  
Howdy All

I am looking for information on who does restoration work on R390A's. I believe there is Mil Com or Mil Spec and a few others who do alignment and module service. Also what was the publication that dealt with R390 info (I think its the Hollow State Newsletter...) I want to subscribe to that and get any back issues.

I'm sorry that I cant chime in on the net like I used to. Our mail server blew up when the network was redone. My routing address is no longer what it once was so any mail sent to my old address does

not appear here anymore. I am currently looking for an alternative server that I can run from home (when I get a pc). Please send any responses directly to me since any thing sent in general to boatanchors will no longer get here. Bummer....

Looking forward to getting back on the net someday.

73's de AA9IL  
Mike Kana

From ab4el.com Fri Aug 19 19:23:01 1994  
From: al511@freenet.HSC.Colorado.EDU (Robert Neece)  
Subject: Random wire tuner

Bob Keys says:

>Even within  
>modern ricebox requirements, there is no need to measure the swr if  
>you are transferring the maximum power to the antenna, by definition  
>you have matched the design impedance of the rig.

This has to be correct. The high-SWR protection circuits that are commonplace in riceboxes allow maximum output only into a load that the ricebox likes. In effect, the ricebox itself is gathering and processing all of the information that is needed about SWR. I do not much like this, of course, having been steeped in the notion that the \*operator\* should control the equipment (and should have the knowledge and training to do it properly) rather than having the \*equipment\* control the operator!

Bob, what about the Hallicrafters HT-32 series and the Collins S-line? The HT-32 series, for example, did not even have an adjustable loading capacitor in the output pi network. These rigs needed a low-SWR load but had no SWR protection circuitry. As to these rigs, is it always true that drawing maximum output from the rig is safe for the rig?

>If one follows the logic of the tuners I mentioned and the type of  
>antenna recommended, then one can see that the need for particular care  
>in swr measurement is minimal. The only case this could be a problem  
>is with a pi-net tuner and some really random wire that was somewhere  
>in the middle between a high and a low impedance feed. There, an swr  
>bridge may be of value. For the series tuned antenna of odd 1/4 wave  
>lengths, I still contend the swr bridge is unnecessary. Likewise for  
>the even 1/4 wave lengths with a shunt tuner (L network).

If a fellow wants to use a single, nonresonant antenna on 160 meters through 10 meters (including the WARC bands), he will need to do a fair amount of tuner-juggling with Bob's system, will he not? And, over that spectrum of wavelengths, isn't he almost certain to encounter situations that are neither multiples of one-quarter wave or of one-half wave? And, therefore, encounter some pretty complex impedances? In other words, a truly random-wire situation?

Also, if one uses a current-fed antenna with direct feed (no transmission line), doesn't he put maximum radiation into his ham shack rather than into the ionosphere? Isn't it more efficient to have maximum antenna current occur in a less-RF-absorbing environment than a ham shack? I realize that direct feeding of a current-fed antenna will work but, especially with QRP, wouldn't one prefer something that works even better?

Just some thoughts stimulated by Bob's interesting posting.

--

73 de Bob, K0KR

From ab4el.com Fri Aug 19 18:03:40 1994

From: al511@freenet.HSC.Colorado.EDU (Robert Neece)

Subject: Re: Random wire tuner?

Kalman, WD6CZI, writes:

>Aside from field

>day, camping trips, and Zeppelin or WW2 aircraft applications, most

>people don't run long wires directly out of the shack anymore. And

>with good reason - who wants to have a shack hot enough with RF to

>be able to tune your rig directly by how stiff the hair is on your

>neck?

Actually, I would love to try some Zeppelin and WW2 aircraft applications! Where can I get a ride?

>With any typical xcvr or xmtr of the last 45 years,

>I would say the best bet is to leave it [the SWR meter] in the line,

>and make sure that

>the transmitter is seeing a reasonable impedance (as indicated by swr).

I'm not sure about the 45-year time frame, but otherwise I am in wholehearted agreement with Kalman.

>>Try a 600-ohm load on a ricebox, even a ricebox with the expensive

>>automatic antenna tuner. Chances are the ricebox will not be happy!

>  
>You'd have a fried rice (box) :),

Kalman, that's pretty cheap humour, but I still laughed!

--  
73 de Bob, K0KR

From ab4el.com Mon Aug 22 17:03:20 1994  
From: rdkeys@csemail (R. D. Keys)  
Subject: Re: Random wire tuner? et

>  
> On 08-18-94 rdkeys@csemail.cropsci.ncsu.edu wrote  
>  
> > ... on zero length feedlines swr  
> > is meaningless, and the way to tell maximum power transfer (best match  
> > to any given generating device --- modern or boatanchor) is to use an  
> > rf ammeter or a field strength meter.  
>  
> Interesting discussion...  
>  
> In my solid state rigs (2 homebrew, and a Ten-Tec Argosy), I have not always  
> gotten a peak antenna current reading coinciding with lowest SWR at 50 ohms.  
> My theory: that the output impedances are not exactly 50 ohms!

Granted. But, it sounds like you are feeding coax fed antennas with a tuner. The original discussion was limited to end fed wires and associated tuners. There, I suggested a low impedance tuning system (series coil and cap with odd number of 1/4 waves end fed antenna) or high impedance tuning system (shunt fed [L network] series coil/shunt cap with even number of 1/4 waves end fed antenna). These were fed with coax lines approaching a null length coax (much less than 20 percent of a wavelength long) --- enuf to connect the tuner to the rig. On these systems, swr has no meaning. Impedance transformation and power transfer to the radiating system does. Use of a field strength meter in lieu of an swr bridge is entirely appropriate in these systems. Use of an RF ammeter in the line is entirely appropriate in these systems and is the historical method of choice. Since most hams don't have suitable RF ammeters handy, a field strength meter, properly used will work fine.

If you have not gotten a peak antenna current reading coinciding with lowest SWR at 50 ohms, your load is not matched. The small bit you may be off due to the rig being 52 ohms and the coax 40-60 ohms, in practice is no problem for most installations. Your rig should have a design tolerance of maybe 47-57 ohms, internally. Externally, using my suggested systems, they should be a very close match when the field strength meter indicates max. If you are feeding coax outboard

of the tuner, then NONE of this applies. But, if you choose your coax lengths correctly for the particular antenna system that you have, you can minimize the impedance mismatches. HINT: Keep a few short lengths of coax of say 2,5, and 10 feet in length of both 50 and 72 ohm coax, and maybe 90 ohm if you have it. KEEP THEM CLEARLY MARKED. Add or subtract one or two lengths, as appropriated to your coax feed to find the best match. Note that you are using transmission line transformers at this point and that can become another complex issue, with its attendant variables and pro/con.

> With broadband  
> output transformers that have relatively few turns, you can't possibly wind  
> them for an EXACT 50 ohm impedance transformation, plus the usual variables in  
> transistor characteristics, final PA voltage, etc.

Not exactly, but, within design tolerances of say  $\pm 10$  ohms you should not have any practical problems tuning with the field strength meter, even into coax. There is no problem at all into null length coax/feedlines and end fed antenna systems, especially if you know what lengths of wires you are using and what their impedances and characteristics SHOULD be, right from the start.

>  
> Thoughts?  
>  
> : John Seboldt rohrwerk@holonet.net / I am Bach of Borg...  
> : Amateur radio K0JD... / your style will be  
> : Church of the Annunciation, / assimilated.  
> : Minneapolis /  
>  
> -> Alice4Mac 2.3 E QWK Eval:05Mar94  
>

Bob  
NA4G

From ab4el.com Mon Aug 22 15:55:12 1994  
From: rdkeys@csemail (R. D. Keys)  
Subject: Re: Random wire tuner? etc, ad nauseum

Greetings.... Ade....

Gee, yer a famous fella, fer sure, on the net....

>  
> This thread is quite interesting. I'd emphasize two points.

> 1) Minimum SWR does NOT always correlate with maximum field strength. There are  
> various reasons for this divergence. For one, the SWR meter measures the degree  
> of mismatch between transmitter output circuit and the antenna tuner which  
> transforms the feedline impedance to something acceptable to the transmitter.  
> The SWR does NOT provide any information about what is happening on the  
> feedline connected to the output side of the tuner. Nor does it say anything  
> about the amount of incident power being transferred to the antenna itself.

Granted.

Our discussions were originally about end fed wires and suitable tuners therefor. Most end fed antenna systems I know of and have used are just that, end fed at the shack end, and have a feedline length approaching a null feedline. In such cases SWR is misleading and mostly meaningless.

In the examples I originally gave, there were no coaxes outboard of the antenna tuners. The tuners were fed directly from the transmitter with a null length coax (or close approximation thereto).

I these cases, my experiences indicate that max out == best match == no swr problems. I read max out on a field strength meter. If you have one handy as well as the in-line swr bridge, try the experiment of using a 65 foot piece of wire with a ground/and/or/65 foot counterpoise on 80 meters and see what the meters actually indicate.

> Unless an antenna tuner is well designed, stray r.f. currents will circulate  
> in the tuner itself without ever reaching the feedline. From my experience,  
> such circulating r.f. currents, which affect the complex impedance presented to  
> the transmitter output, can produce a lower SWR than that which obtains at  
> maximum power transfer to the feedline. This phenomenon is fairly well  
> documented in ham literature over the years.

Most tuners are not well designed, and many are often improperly tuned, because many folks don't seem to understand the transformations that are going on in the tuners, from the practical point of view. It is a problem I have seen repeatedly over the years.

> Those who argue for tuning for maximum field strength are in the right. It is  
> possible, for example, to shunt the output of the tuner with a pure resistance  
> of appropriate value and get a perfect 1:1 SWR reading. Very little r.f. goes  
> to the antenna. This is not a far-fetched scenario: maybe some of you will  
> recall the battles about the matching balun guaranteed to produce a very low  
> SWR (1.2:1 max, or something like that) on every band and every antenna. When  
> the ARRL blow-torched (no exaggeration) a sample apart, they discovered that  
> the antenna actually was fed in parallel with a fairly high-power dummy load.  
> So, regardless of the actual antenna impedance, most of the power was being

> dissipated in the balun. A lot of guys shelled out a lot of bucks for the  
> beauty of all-band 1.2:1 SWR without messy tuning or knobs or adjustments, and  
> most of those guys swore by the balun. Of course, they were running KW's with  
> all the bells and whistles -- in which case, they could have saved the energy of  
> putting up an antenna and just left the feedline lay on the shack floor.

Good points. Tuning a pi-net tuner or a T-net tuner improperly will cause large circulating currents to appear in the tuner with little real output. The SWR meter indicates just fine, but the antenna is only radiating a few watts. The tuner is a resonant tank just heating itself up. The antenna is not coupled out of the tuner, so the output is nil.

I like that example of the lossy balun. There are times to use such devices, but people should know what they are doing with them, and the pro/con of the particular expedient. Zip cord is another example. People downplay it and poopoo it but the reality of it is that it can make a very workable antenna and associated feedline on hf, even though it is rather lossy. If the 100 watt rice box is putting 50 watts out the feedline and only 10 watts get actually radiated, that is fine, if need be. Those 10 watts of real power do quite well, as your experiences have indicated over the years.

>  
> 2) R.f. ammeters are very difficult to come by. A simple substitute that has  
> been used since "day-1" uses a flashlight bulb as a current indicator. The  
> instrument is quite simple but has the limitation of not being usable when a  
> coax feedline is involved. However, it works naturally with twinlead or open  
> ladder line. Two ways. 1) mount the bulb in a socket with 2-inch or so leads.  
> 2) solder 2-inch leads to the bulb itself (touchy approach). Alligator clips  
> are attached to the ends of the leads

Good point. If people do a goodly amount of junkbox searching and digging at hamfests, it is rather easy to come up with a 0-1 or 0-3 RF ammeter. These are good for the average 50-100 watt rig, but QRP won't budge them. They make very nice indicators on the OUTBOARD side of the tuner in coax fed installations. Finding a good 0-100ma RF ammeter for QRP use is another story. They exist but are rare as hen's teeth.

>  
> The idea is to connect the bulb across a longer section of one conductor of  
> the feedline. In other words, 4-in of leads + alligator clips across a 12-inch  
> section of conductor.  
>  
> The measurement point can present a problem at QRP levels. At current nodes,  
> 1-watt probably won't give a noticeable glow in the bulb filament. However, if  
> the measurement point can be shifted closer to a current maximum, a useful  
> reading will result with 1-watt. The tuner is adjusted for maximum glow. I've  
> never had a bulb actually light up with 1-watt -- instead a dull red or orange

> and sometimes a white glow is the result. Also, adjustment a dusk makes it  
> easier to see what is happening. The adjustment for maximum current indication  
> always coincides with maximum field strength, but not with minimum SWR.  
>

A field strength meter hooked up in place of your light bulb to the  
rf coupling dipole makes a good sensitive indicator, also, but it is  
a bit more cumbersome.

> 73, Ade

73 Bob NA4G

From ab4el.com Fri Aug 19 14:12:52 1994  
From: rdkeys@csemail (R. D. Keys)  
Subject: Re: Re. BC-375/191

>  
> to: boatanchors@gnu.ai.mit.edu  
>  
> Hello Bob, NA4G.  
>  
> Re. "Flaming";  
>  
> Well, I'm not gonna claim that I'm above strapping on the old flame thrower,  
> but I don't see the need here ;- ) What we have here isn't a flaming situation,  
> just an honest difference of opinion on a piece of equipment. THAT'S worth the  
> continuation of discussion; a flame war isn't!

No flames, for sure, the seat of my drawers gets too hot from the XYL and  
her FCC hit list cordless fone around my boatanchors..... (:+{} }.....  
I just love a goodly armchair net QSO, even from differing points of view.  
My flak suit is hanging up on the hook....., so.... tally ho....

>  
> In a way, your comments substantiated my position! You see, I ran a BC-375  
> when I was back in high school; my pattern was to work 40 metre CW DX all  
> night and doze through 1st period chemistry class the next morning!

Ahh....., the adventure of it all. I doff my bowler to you, sir, since  
you are among the few who have actually plied these waters of adventure  
with said behemoth. Most speak from unsubstantiated pillars.  
EEK, 40 meters, that is a real gotcha with the behemoth. Unless run from  
a laboratory regulated power supply, it is, a bit substandard on 40 CW  
for the purists. On 80/160 it is fine. More later.....

>

> I got a 375 because it was cheap. Arrow Electronics on surplus row back in  
> Chicago was getting ten bucks a copy for them, power cable included. Spare  
> VT-4C tubes (aka 211) were 79 cents a copy, and 10Y audio drivers were a half  
> buck each.

Memories..... oh, such memories of the ads in the ham rags of the day.  
G&G down on Radio Row, J.J. Glass and Columbia out in LA, Anker down  
in San Diego and Wilkes Barre....., yep, I shed a tear when I see those  
ads and a warm fuzzy comes over me when I think of the barrels of FT-243's  
the pallets of TU-5/6/7/8/9/10 tuning units and the great mountains of  
piled up boxes of all description.... that I stumbled and climbed over  
as a wet-eared geek of a novice..... (:+}}.....

I would love to see those prices and quantities again.... My supplies of  
VT-4C's and VT-25's is getting slim.

>  
> Up to this time my main transmitter was a Knight Kit T-50, which, I recently  
> found out, delivered a grand total of 13 watts to a 50 ohm load. Like most  
> high school kids, I was power hungry, and the BC-375 seemed like the way  
> to go.

Thirteen watts to at most 50 watts....., well....., that might be worth  
the adventure in the eyes of a high school kid with dreams of conquering  
the DX dragon.....

>  
> Armed with power supply components and assistance from K9ANM, an older and  
> wiser ham who lived around the corner, station WA9QMB got into the BC-375  
> business, despite considerable trepidation on the part of Rube, K9ANM. After  
> all, he was about a block away, and had to operate HIS station thru any trash  
> generated by this hoary old veteran in the hands of a punk kid!

Methinks the power supply was the problem, first off.

Secondly, the hoary old veteran was more shock appeal than anything else.  
The reality was it usually does put out a fairly good signal, except for  
the problems you had. I can fully understand why, now.

>  
> In Chicago, city lots normally run 25' x 125'. The one my parents had was  
> too cluttered to permit simple antennas for anything lower than 7 MHz.

Second problem, 7 mhz. You should have opted for some sort of a 65 foot  
long end fed quarter wave on 80 meters, and you would have been much  
happier. It will even work on 160 meters, fairly well, but won't be a  
DX machine.

>  
> Remember, you yourself said that a BC-375 starts to go bad above 5 MHz. I  
> can verify that statement with a vengeance!

In your case, I would attribute it to the power supply.

My power supplies for average types using BIG transformers that can deliver a load without browning out, or using dynamotors of substantial muscle, work fine on 160 and 80 meters, and the signal is entirely acceptable. On 40 meters, YIKES. I have run a laboratory Lambda power supply on 40 meters, and it is OK, then. But without full B+ regulation, anything higher than about 5 mhz and beware of the fishtailed dragon QSYing and yooping itself across the band.

>  
> The keying was unique; it rather sounded like someone striking a bell. It  
> had a definite thump on the make, and a sort of ringing sound for the entire  
> duration of both dots and dashes. You could just about copy it without a BFO.

I would attribute that to receiver overload or the keying relay being out of sequence. The firing sequence of that bloody relay is critical. The tech manuals show several pages of pictures and schematics and howto on that trick, but it is not the original tech manual for the transmitters, but a later shop repair tech manual that came out late in the war. That is why most folks had such problems with that relay --- the information was very difficult to uncover. Noone thought about sequencing that relay.

>  
> Added to the ringing was a low pitched growl that could be varied, but not  
> eliminated, by tweeking the neutralization capacitor.

Hum modulation of the signal on the oscillator maybe due to AC getting into the power on the oscillator. The neutralization capacitor would not fix that.

Also, neutralization is critical on these beasts. The BC-191 is easy to neutralize, simply by taping over one filament pin on the amplifier tube and the nulling the output on a sensitive output meter of some sort (rf ammeter of 100ma or so or a sensitive field strength meter coupled to it). On the BC-375, you have to remove the back cover, unsolder the plate lead on the amplifier tube and then do the neutralization, and reassemble. It is a real pain on the BC-375, but absolutely necessary, for stable operation. Without that proper neutralization, and the adjustment is quite critical --- like within one little serrated click on the funky little edgewise knob on the tuning unit, the stability can be very bad. Every time you change final tubes --- back to the neutralization bench.

>

> Frequency stability was a joke. I lost many a contact when the other station  
> got tired of chasing my signal as it drifted up the band and out of his receiver's bandpass! Remember, this was the '60s, when transceivers were getting  
> hot, and most of them couldn't yet keep the transmitter on one frequency while  
> "rubbering" the receiver (i.e., RIT wasn't a commonly available feature yet).

I would attribute your frequency stability problems of that magnitude to  
1) power supply regulation key up to key down, 2) power supply regulation  
under longterm load over several seconds, and 3) neutralization.

Some tuning units were somewhat flaky. I have noticed that some are better  
than others, even after neutralization. My guess is leaky or failing  
tuning capacitors in the oscillator section (the 100pf padders).

>  
> In the year or so until I came into a Knight Kit T-150 and the BC-375 got  
> retired, I corresponded with the FCC monitoring facilities at Douglas, AZ,  
> Imperial Beach, CA, and Grand Island, NB (twice for this one). They all had  
> some probing questions to ask concerning, among other things, whether or not  
> I was using filter capacitors in the supply (referring to the growl). Among  
> the hams at school, my transmitter got nicknamed "The Hog", because of the  
> way it grunted!

You, indeed had some horror stories, about the beast. But, I would be of  
the opinion that they could be easily ironed out, knowing what I know now  
about the beast.

>  
> The BC-375 may well be an adequate transmitter on 160 and 80; the fact is  
> that I never ran it there. Besides the lack of a suitable antenna, I also  
> lacked the appropriate plug-in tuning drawers. In any event, my BC-375 had a  
> better fate than many of its ilk. Harold, W9VRS, had an SX-28 Super Skyrider  
> in the front window of his TV repair shop. I lusted after this rig, since I  
> was quickly outgrowing my trusty S-120 and S-38A. Harold thought the BC-375  
> was a good looking rig, and would be a more attractive window display than the  
> SX-28, so a trade was quickly negotiated, and a long, solid friendship began,  
> but that's another story...

Great! Sorry you did not try the 15 foot wire. You know it will load a  
wire antenna of 15 feet length even on 160 meters. It has a very complete  
antenna tuning system that will rival any modern antenna tuner, built-in.  
I have tuned up anything from the fispole whip of 15 foot length to a full  
size end fed hertz. It can tune the bedsprings, literally, and the details  
are hidden in various places in the TM 11-800. But, as kids we tend  
to miss more than a few things in the rush.....

Oh, to have known then, what we know now.....

FB QSO Tom.

You and I both know flames were not intended between us, but you see, since we have both plied the waters on the adventure of the great behemoth, we both have had some goodly yarns to spin about the beast.

It kinda makes me want to set it up again, tonight, and see if it will perk on the CWIST Friday Night Fist Function. I do wish I could come up with the 1000vcd 28vdc dynamotor, somewhere, and the two single pin connectors to fit.

It would not take me more than an hour or so to get it back online, tonight. I may just have to do that..... (:+}}.....

See, you have not only provided good discussion, and a fair chewing of the rag, but also some stimulation to get the behemoth up, again.....

>  
> 73's,  
>  
> Tom "Mr. T." Adams, K9TA  
>

Best 73 TU SU SK DE NA4G  
Bob

```
*****
* 73 TU SU SK DE NA4G      ``Boat Anchor Bob'', an ol' CW fart.  *
*****
* Morse has been in the family for over 100 years.                  *
* Morse radiotelegraphy (Spark/CW) has been in the family since 1914. *
*****
* May you have fair winds and following seas on your watch at the key. *
*****
```

From ab4el.com Fri Aug 19 16:23:48 1994  
From: "J. D. Delancy" <k1zat@bah.com>  
Subject: Re: Re. BC-375/191

On Fri, 19 Aug 1994, R. D. Keys wrote:

> In Chicago, city lots normally run 25' x 125'. The one my parents

What part of Chicago has such big lots? Must be the South Side..

jd

From ab4el.com Wed Aug 24 15:56:39 1994  
From: TOM.A.ADAMS@mail.admin.wisc.edu  
Subject: Re. Scope/Mod monitor??

to: boatanchors@gnu.ai.mit.edu

Gary mentioned the older tube type Tektronix scopes for this purpose. I vote for that approach too.

I use my trusty old 545A, mainly because it's around. I don't normally keep a scope in the line; if I did that I'd go for something much smaller.

To couple the scope to the line I threw together a box to insert in the line (in fact, it stays there all the time). The transmission line simply loops thru while the scope is connected to a simple resistive divider. I think I used something like a 100K (tied to center conductor) in series with a 1K (tied to ground). The scope is connected to ground, and the junction of the two resistors. Hooked to the scope's vertical input, it's more than adequate for HF operation.

Mr. T.

From ab4el.com Wed Aug 24 16:36:14 1994  
From: "James Beyer" <beyer@eceserv0.ece.wisc.edu>  
Subject: Re:Antennas, VSWR. etc.

>  
> >  
> >OK folks, ol' NA4G bit the bullet and stuffed the wad of money between  
> >the choppers..... and did the experiments, last night.  
> >  
> >On the subject of end fed wire tuners, null length coax feedlines and  
> >SWR, and the use of field strength meters as the tuning indicator:  
> >  
> > >  
> >+++++  
> >My experiments to test the waters PRACTICALLY last night were:  
> >+++++  
> >  
> >Materials and Methods:  
> >  
> >1. I ran up a piece of wire 66 feet long to a tree. Added a 4 foot  
> > leader to bring the thing into the shack. Added a 66 foot

```

> > counterpoise wire to the ground connection.
> >
> >2. I used a series coil and capacitor (1.5 inch coil wound with 25
> > turns of bell wire for 80 meters and another 1.5 inch coil wound
> > with 10 turns for 40 meters --- capacitor 250pf variable) to tune
> > the system to 80/40m. The tuner was hooked up to the swr bridge
> > with a 1 foot piece of coax cable and an alligator clip to the coil.
> > The other end of the bridge was hooked up to the rig (standard
> > TS-140S rice box transceiver) with another 1 foot piece of coax.
> > The swr bridge was a standard GC thing that measures swr and
> > power and is reputed to work up to 30 mhz or beyond.
> >
> >
> >
> >Results:
> >
> >1. On 80 meters, the series coil of 25 turns and capacitor with about
> > half mesh tuned the 66 foot wire with 4 foot leader to resonance as
> > indicated on the field strength meter sitting on top of the relay
> > rack in which the gear is mounted. WHEN THE FIELD STRENGTH METER
> > PEAKED THE SWR DIPPED AND THE SWR WAS LESS THAN 1.1:1. (ABOUT HALF
> > THE WIDTH OF THE METER NEEDLE). THE PEAK AND THE DIP COINCIDED
> > EXACTLY. Full power was apparently transferred to the load.
> >
> > etc.

```

Bob,

I commend you for doing the experiment, now we have something specific to talk about. It's very difficult to generalize about antenna questions because the small differences in geometry make all the difference.

For your vertical quarter wave fed against ground I would expect that a fieldstrength reading would be a perfectly good method for tuning. Measuring the near field of such an antenna would be a reliable method for predicting far field performance. This should be true for most practical antennas. The general case where such a measurement might be misleading occurs when the "antenna" is highly reactive and the reactive field maximum doesn't coincide with the radiation field maximum. It's the type of antenna we all try to avoid. The point is that a fieldstrength meter responds to a reactive field in the same manner as it does to a radiation field. So some care should be exercised.

The VSWR question can be resolved by considering how the SWR bridge functions. These devices measure voltage (not power!) across the line, and line current. The current measurement is accomplished by using a current transformer and then driving a resistor of value equal to the characteristic resistance to yield the voltage  $I \times R$  characteristic. These two voltages are now added and the

meter is set to full scale. When the two voltages are subtracted the meter reads reflection coefficient magnitude. Since there is a direct relationship between reflection coefficient and VSWR the meter can also have a scale indicating VSWR directly. The point here is the meter doesn't measure a standing wave voltage maximum and a standing wave voltage minimum and determine the ratio, it's done indirectly. Hence, NO line length is necessary at all, the (R characteristic) information comes from the resistor built into the bridge. The reason this works so easily results from the theory that total voltage on a transmission line is the sum of forward traveling VOLTAGE wave and the reverse traveling VOLTAGE wave at any point. In addition the total current is the difference between these two VOLTAGES divided by R characteristic. So by multiplying total I by R characteristic, one obtains a voltage equal to the difference of V forward and V reverse. When this voltage is added to the sum voltage measured above the result yields the forward component only. And when the two voltages are subtracted the result is the reverse voltage only. Their ratio is the reflection coefficient and everything else is calculated from there. It seems strange that no transmission line is needed at all, and most of the time the bridge would be used with a line, but it's not necessary. Now back to your case, when you resonate the antenna you present approximately 50 ohms real to the bridge output terminals. The bridge measures the total voltage and total current at these terminals, It "thinks" it's measuring x-line current and voltage. For the 50 ohm real case the voltage and current are in phase so when the two bridge measurements are subtracted the result is zero, i.e. no reverse voltage wave. Hence, VSWR 1:1, R load equal to 50 ohms. Your transmitter is happy and so are you. I prefer to think of the SWR bridge as measuring reflection coefficient at its terminals, all other values are calculated from that. So one can calculate a VSWR even though no standing wave exists (and, the information is valid and useful). By the way, when the sensed voltages are added they yield a maximum for V forward. That's why V fwd max, V rev min, and max field strength all occur simultaneously in your measurement.

I think these points are important to boat anchor lovers because these transmitters (especially military) were designed to load most any kind of antenna including the proverbial bedspring. Some of these "antennas" can be highly reactive and lossy and fool one into thinking they're good antennas. (By the way, for the bedspring, it's the coils that make it work)

I would just like to add that when I said "voltage, not power" above, there was meaning in my madness. The so called powers are also calculated values and result from the DEFINITION of incident and reflected power. These power readings do not represent average power "traveling" on a line because average power does not travel. Their difference, however, is the true average load power, i.e. the level in Joules per second (Watts) that ENERGY is being accepted by the antenna.

My apologies, I didn't expect this to get so long.

73,

Jim Beyer W9ADJ

From ab4el.com Wed Aug 24 22:51:03 1994  
From: janderson@polycom.com  
Subject: Re: Re:Antennas, VSWR. etc.

Jim:

Very good discussion concerning SWR meters. The way that I've rationalized their working (at least the ones that are "4 port" hybrids sampling V and I, like the one you described), is more in line with impedance bridges. That is, as the impedance changes at the "Antenna" port, the voltages measured at the two "measurment" ports (terminated with the "characteristic" resistance) will also change.

I first found this out when building a 4 port hybrid for SWR measurement. During testing I realized that I didn't need to have a transmission line hooked up to see how it worked - I could simply connect resistors to the Antenna port. With 50 ohms, I got the correct reading for 1:1 SWR. Opening or shorting this port gave me the correct reading corresponding to infinite SWR. But what was important to me was that I didn't have a feedline attached, so I wasn't dealing with forward and reverse traveling waves - it was a simple lumped, not distributed, circuit. And therefore, since I wasn't truly measuring traveling waves, I must be measuring impedance mismatches between the ports, as this was the only thing changing (at one time I actually rationalized out how this worked, but it's been a while, and I've forgotten it).

Oh oh, now that I think about it (as I type!), if the above is true it also means that, as we move a hybrid bridge along a transmission line (making measurements as we go), then "SWR" measurement ought to change too, since the impedance, looking towards the antenna, will be changing (if antenna impedance doesn't equal line impedance).

Well, it seems my "lumped circuit" model doesn't work in the distributed circuit application. But how can I use the "distributed circuit" model in the lumped circuit case? As you said, strange indeed. There must be a way to reconcile them, but I don't know what it is. Can either you or Bob (or anyone else) help me find the flaw in my reasoning?

Thanks for any insights,

- Jeff, WA6AHL

Another thought: maybe, indeed, a hybrid bridge, as it is moved along a transmission line, will actually show different readings (although the standing wave ratio should always be the same)! Has anyone tried this?

By the way Bob, I stand corrected concerning circulating currents - I've talked to several people who have had tuners get quite hot (when running kilowatts). So indeed a measurable, and perhaps significant, amount of power can be lost within the tuner due to ohmic resistance.

From ab4el.com Wed Aug 24 22:55:38 1994  
From: beyer@eceserv0.ece.wisc.edu (James B. Beyer)  
Subject: Re: Re:Antennas, VSWR. etc.

> Jim:

>  
>  
> Very good discussion concerning SWR meters. The way that  
> I've rationalized their working (at least the ones that are "4  
> port" hybrids sampling V and I, like the one you described), is  
> more in line with impedance bridges. That is, as the impedance  
> changes at the "Antenna" port, the voltages measured at the two  
> "measurment" ports (terminated with the "characteristic"  
> resistance) will also change.

>  
> I first found this out when building a 4 port hybrid for  
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> simply connect resistors to the Antenna port. With 50 ohms, I  
> got the correct reading for 1:1 SWR. Opening or shorting this  
> port gave me the correct reading corresponding to infinite SWR.  
> But what was important to me was that I didn't have a feedline  
> attached, so I wasn't dealing with forward and reverse traveling  
> waves - it was a simple lumped, not distributed, circuit. And  
> therefore, since I wasn't truly measuring traveling waves, I must  
> be measuring impedance mismatches between the ports, as this was  
> the only thing changing (at one time I actually rationalized out  
> how this worked, but it's been a while, and I've forgotten it).

>

> Oh oh, now that I think about it (as I type!), if the above  
> is true it also means that, as we move a hybrid bridge along a  
> transmission line (making measurements as we go), then "SWR"  
> measurement ought to change too, since the impedance, looking  
> towards the antenna, will be changing (if antenna impedance  
> doesn't equal line impedance).  
>

> Well, it seems my "lumped circuit" model doesn't work in  
> the distributed circuit application. But how can I use the  
> "distributed circuit" model in the lumped circuit case? As you  
> said, strange indeed. There must be a way to reconcile them, but  
> I don't know what it is. Can either you or Bob (or anyone else)  
> help me find the flaw in my reasoning?  
>

> Thanks for any insights,  
>

> - Jeff, WA6AHL  
>  
>

> Another thought: maybe, indeed, a hybrid bridge, as it is moved  
> along a transmission line, will actually show different readings  
> (although the standing wave ratio should always be the same)!  
> Has anyone tried this?  
>  
>

Jeff,

If you stick to the fact that the "bridge" is measuring reflection coefficient magnitude and not impedance you won't get into that corner. It doesn't matter where the measurement is made along a line because the "bridge" measures total voltage and total current at the same point on the line. When these two values are added the contribution from the reflected wave disappears. What is left is the incident voltage complete with phase (which depends on the point of measurement). However, the phase is ignored by the bridge and only the amplitude matters. Likewise when the two values are subtracted the incident term disappears. The reflected voltage remains but again its phase doesn't affect the result. It's a neat and subtle effect and whoever thought it up was clever. The result is a measurement of the MAGNITUDE of the reflection coefficient which is position independent on a lossless line. One can't determine impedance from the device since phase information is lost but since VSWR depends only on reflection coefficient magnitude it works fine. One caveat: when the VSWR is high one may get position dependent results when adding or subtracting the voltages if the system has a limited dynamic range. From the discussion above you see that operation depends on one of the wave voltages going to zero. If that doesn't happen then phase rears its ugly head and the system fails.

> Hope that helps. 73,  
>

Jim

From ab4el.com Tue Aug 23 20:10:13 1994  
From: Scott\_Johnson-AZAX60@email.sps.mot.com  
Subject: RE>Re- Scope/mod monitor ??

Reply to: RE>Re: Scope/mod monitor ???  
OK Here is what I know (It's not much)  
SB-610- Modulation monitor for SB series  
SB-620- Spectrum (panoramic) display for SB series  
SB-614- Combination of the two (solid state) for the SB-104

-----  
Date: 8/23/94 2:14 PM  
To: Scott Johnson  
>From: jkearman@arrl.org@azbcsml  
Encoding: 19 TEXT  
X-Mailer: Microsoft Mail V3.0

Scott, NX7U said:

>The SB-620 (or whatever) is basically the same 'scope as the H0-10, but  
it's  
>solid-state (gasp!). It's styled in that off-green to match the Heath  
SB-104  
>series of stuff. This model goes for a bit more, say \$65-\$80

The SB-620 was styled after the SB- series of Heath gear, and came out about  
the time of the SB-102. It was not solid state, except for the HV rectifier  
etc. There may have been a later model introduced to be coordinated with the  
SB-104; once the SB-104 came out, I stopped paying attention to Heath gear,  
except for the QRP rigs.

73

Jim, KR1S  
Builder of an SB-620, SB-104 (not mine) and HW-8, among others....

From ab4el.com Wed Aug 24 16:20:03 1994  
From: "Kenan, Larry" <larryk@frick.sandiegoca.NCR.COM>  
Subject: Re[2]: Johnson ant relay connector ?

>>For some reason that certainly seems to elude me, the Wizards at  
>>E.F.Johnson decided to use a small crystal socket (HC-6/U? HC-23/U?) for  
>>the 115vac connection for the antenna changeover relay on the Ranger,  
>>Valiant, etc.

>>Does anyone have a good suggestion for a mating connector?

>The pins from a wire wrap IC DIP socket fit in the Johnson crystal socket OK.

Sorry - I spoke before I thought. That was a different project.  
The pins to fit a Johnson crystal socket must be larger diameter than that for a  
snug fit. What I actually used to make this connector was an old computer board  
power connector from my junk box.

Mia culpa, mia culpa, mia culpa.

Larry Kenan - KD6CKR

From ab4el.com Mon Aug 22 00:56:39 1994  
From: Dave Horsfall <dave@esi.COM.AU>  
Subject: Rigs and dishwashers

I saw this over in rec.radio.amateur.homebrew, and the devil made me post  
it here...

>From: wwg@coutts.UUCP (Warren Gay)  
Newsgroups: rec.radio.amateur.homebrew,sci.electronics,rec.radio.amateur.misc  
Subject: XYL Reactions (snicker- Kodak moment) (was Re: IC-751A HF Transceiver)  
Date: 19 Aug 94 02:56:31 GMT

In article <keith.35.0009023A@radio.nl.nuwc.navy.mil> keith@radio.nl.nuwc.navy.mil  
(Keith Kanoun) writes:

>In article <eaim084-1408941503350001@fl08ara003.comm.mot.com> eaim084@email.  
>mot.com (Steve Carlton) writes:

>>A friend of mine had a similar experience with a HW-101 which was sitting  
>>in a garage in Florida for many years. It was full of dirt and cobwebs. He  
>>took all the tubes out and put it in a dishwasher and washed it then  
>>rinsed several times. After drying, he replaced all the tubes, cleaned the  
>>volume control, etc and the unit fired right up. Don't know if this will  
>>work for you, but it did for WB4ZZB.

[...]

>Maybe plain water in the dishwasher (no soap) is "safest".

[...]

>keith@radio.nl.nuwc.navy.mil

If it has any plastic parts, be very careful. At the end of the wash,  
many dishwashers turn on a heating element that has ruined many a

plastic article in ours. Since a HF rig is not something you casually put in the dishwasher and go watch TV, I suppose this is not too much of a problem to remember to remove it!

I would think that meters might suffer from leakage and water moisture build up.

But then again, as in some equipment, if you have nothing to lose, then why not. I know some people that have disassembled hard disks in their "non-clean" basements, and put them back into service successfully. So, who knows whether a gamble pays off or not?

Actually, come to think of it... why not put the TUBES in the top rack? Get them all nice and spiffy clean... they're least likely to suffer from it, assuming they can't move much!

- \* -

I can just imagine what my XYL's reaction would be... opening the dish washer and pulling out the top drawer full of tubes (snicker)... ...then pulling out the bottom drawer with the old boat-anchor (rig) sitting on it!!!

Then the side tray where the silverware normally goes, I could leave my favourite pliers, screwdrivers, and open-end and box-end wrenches.

Ah... that would be fun... even if it meant the dog house for a week. A Kodak moment... good footage for America's funniest videos.

-----

Warren W. Gay VE3WWG

John Coutts Library Services Limited

wwg@coutts.UUCP

Niagara Falls, Ontario, Canada

(or wwg%coutts@uunet.ca, wwg%coutts@uunet.uu.net)

--

Dave Horsfall (VK2KFU) | dave@esi.com.au | VK2KFU @ VK2AAB.NSW.AUS.OC | PGP 2.6  
Opinions expressed are mine. | E7 FE 97 88 E5 02 3C AE 9C 8C 54 5B 9A D4 A0 CD

From ab4el.com Tue Aug 23 03:59:07 1994

From: X90GALBRAIT1@wmich.edu

Subject: Scope/mod monitor ???

Now that Nick has given me enough modifying info for my DX-100 to keep me busy all winter, I am looking for a scope to monitor my signal's waveform.

What would be a good (boatanchor, of course) choice for monitoring AM/SSB/CW? Main criterion are tube-aspirated and cool looking, under \$100, and easy to use (I have no experience with scopes). Something that I could use for other BA troubleshooting would also be a plus (gradually getting my feet wet-of course with the power removed and the power supply caps discharged, heh heh).

What's a good BA scope? Got one for sale? Also, do you need a special circuit for obtaining a "sample" of the signal?

73, Chris KA8WFC

From ab4el.com Tue Aug 23 12:03:31 1994

From: NX7U@aol.com

Subject: Re: Scope/mod monitor ???

Well, Heath made two good station monitors, the HO-10 and SB-620 (or maybe 612...the memory is fading).

The HO-10 is a basic monitor--you plug in TX on one end, ANT on the other, and away you go. It also has RTTY inputs for monitoring demodulated RTTY.

And of course, it's hollow-state.

One problem I've noted with the HO-10 is some of the HV bypass/coupling caps are extremely hard-to-find polyester jobs (0.1uF/1.6kV). And they do go south at times. Plus, the power transformer is the most frequent cause of failure, and it's unavailable from Heath (even when they were still officially "in the business").

Plus, it's always somewhat of a challenge to find an unburned CRT with these guys. Although, Fair Radio sells new replacement CRT's (I believe it's a 3JP1) for around \$20 last I checked.

Expect to pay \$50-\$75 for an HO-10 in decent shape.

The SB-620 (or whatever) is basically the same 'scope as the HO-10, but it's solid-state (gasp!). It's styled in that off-green to match the Heath SB-104 series of stuff. This model goes for a bit more, say \$65-\$80.

If you want to use just a general purpose Oscilloscope (like the Heath HO-12, maybe?) the sampling circuit is simple. Just use a Tee-junction with the center pin of the Tee removed, so that a coax attached to the center of the Tee doesn't make physical contact with the thru path. The sampler doesn't need to be calibrated to any particular coupling level for the purpose of monitoring your signal.

Scott nx7u@aol.com

From ab4el.com Tue Aug 23 16:39:50 1994

From: "Kearman, Jim, KR1S" <jkearman@arrl.org>

Subject: Re: Scope/mod monitor ???

Scott, NX7U said:

>The SB-620 (or whatever) is basically the same 'scope as the H0-10, but it's  
>solid-state (gasp!). It's styled in that off-green to match the Heath SB-104  
>series of stuff. This model goes for a bit more, say \$65-\$80

The SB-620 was styled after the SB- series of Heath gear, and came out about the time of the SB-102. It was not solid state, except for the HV rectifier etc. There may have been a later model introduced to be coordinated with the SB-104; once the SB-104 came out, I stopped paying attention to Heath gear, except for the QRP rigs.

73

Jim, KR1S  
Builder of an SB-620, SB-104 (not mine) and HW-8, among others....

From ab4el.com Tue Aug 23 18:40:58 1994  
From: JosephWP@aol.com  
Subject: Re: Scope/mod monitor ???

Scott,

The SB-620 is NOT solid state, nor is the SB-610.

The SB-610 is the later version of the H0-10.  
The SB-620 is the later version of the H0-13.

The SB-620 is principally a panoramic adapter for a receiver.  
The SB-610 is designed principally for transmitter monitoring.

I have both model and would not be without them. You are correct about the HV caps - they do go easily. There are Orange Drops which you can use as replacements (I have)..

Joseph Pinner +  
Lafayette, LA  
KC5IJD

From ab4el.com Tue Aug 23 19:48:14 1994  
From: Nick England <nick@cs.unc.edu>  
Subject: Re: Scope/mod monitor ???

Heath trivia-

Monitor Scopes:

The HO-10 has tubes and matches the Apache/Mohawk styling.

The SB-610 has tubes and matches the SB-100, SB-300, SB-400, etc. styling

The SB-614 has transistors and matches the later SB-104 styling.

Panadaptors:

The HO-13 has tubes and matches the Apache/Mohawk styling.

The SB-620 has tubes and matches the SB-101, SB-301, SB-401, etc. styling

Nick KD4CPL the Heath fan

From ab4el.com Tue Aug 23 20:35:49 1994

From: censun1!gc@uunet.uu.net (Gary Chatters)

Subject: Re: Scope/mod monitor ???

Chris asks:

>

>What would be a good (boatanchor, of course) choice for monitoring AM/SSB/CW?

>Main criterion are tube-aspirated and cool looking, under \$100, and easy to

>use (I have no experience with scopes). Something that I could use for other

>BA troubleshooting would also be a plus (gradually getting my feet wet-of

>course with the power removed and the power supply caps discharged, heh heh).

>

>What's a good BA scope? Got one for sale? Also, do you need a special

>circuit for obtaining a "sample" of the signal?

>

A couple of responses have mentioned the Heathkit monitor 'scopes. I have used them at club stations and they can be quite useful. In addition to a power output indication (which could just as well be done by a meter, of course) they will immediately show you if you have your transmitter adjustments so messed up that your signal is flat-topping or otherwise distorted or if you are getting any modulation on AM. The signal sampling is done internally. There is a RF-in and RF-out coax connectors (SO-239), so you don't have to worry about special sampling circuits.

Now for a good BA general purpose 'scope for BA (or any other) troubleshooting the choice would be a Tektronix 'scope.

Big, heavy and noisy, they are indeed "boatanchors".

But they work. Now that the solid-state versions are becoming affordable the tube 'scopes (when I see them at all) seem to be rather cheap. Even if you have no experience with 'scopes they would still be a good place to start.

I have used these 'scopes but right now I don't think one would fit in the apartment, so I am using the Tek' 7603 'scope.

I never did figure out all the type numbers, but I would suggest looking for one of the 5xx series. These are the ones with a single plug-in in the lower left corner.

Although getting a manual may be difficult, there is a book out by a Tek' engineer on buying and restoring these 'scopes. I haven't read it myself but it sounds like it would be good. (Has anyone seen it?).

73,

Gary

From ab4e1.com Tue Aug 23 22:11:19 1994  
From: cotton@thumper.bellcore.com (Chase Cotton)  
Subject: Re: Scope/mod monitor ???

>> Gary says:  
>>  
>> Although getting a manual may be difficult, there is a book out  
>> by a Tek' engineer on buying and restoring these 'scopes.  
>> I haven't read it myself but it sounds like it would be good.  
>> (Has anyone seen it?).

I've not seen it, but here are the details (from my netnews archives):

>> Article: 10792 of rec.radio.swap  
>> Subject: Tek Oscilloscope Restoration Book  
>> Date: 24 Feb 94 21:42:26 GMT  
>> Organization: Tektronix Inc., Beaverton, Or.  
>>  
>> For Sale  
>>  
>> "Oscilloscopes..Selecting and Restoring a Classic"  
>>  
>> This book covers 230 Tektronix Oscilloscopes made  
>> between 1947 and 1969.  
>>  
>> It gives recommendations on which scope to buy, and  
>> what today's suggested price would be.  
>>  
>> Included are chapters on troubleshooting and repair,  
>> plus sources for parts.  
>>

>> Written by Stan Griffiths, W7NI  
>> Price: \$19.95 postage paid.  
>>  
>> Stan Griffiths  
>> 18955 S.W. Blanton  
>> Aloha, Oregon 97007  
>> Phone (503) 649-0837

Chase

-----

Chase Cotton cotton@thumper.bellcore.com

p.s. I'm off to Australia tomorrow evening. Any boatanchors in Melbourne?

From ab4el.com Wed Aug 24 10:45:06 1994  
From: "Roy Morgan" <morgan@speckle.ncsl.nist.gov>  
Subject: Re: Scope/mod monitor ???

On Tue, 23 Aug 1994 21:04:59 -0400,  
Chase Cotton <cotton@thumper.bellcore.com> wrote:

> >> Gary says:  
> >>  
> >> Although getting a manual may be difficult, there is a book out  
> >> by a Tek' engineer on buying and restoring these 'scopes.  
> >> I haven't read it myself but it sounds like it would be good.  
> >> (Has anyone seen it?).  
>  
> >> "Oscilloscopes..Selecting and Restoring a Classic"  
> >>  
> >> This book covers 230 Tektronix Oscilloscopes made  
> >> between 1947 and 1969.

Yup, I got one from Electric Radio. It's an overview of each piece of equipment: plug-in's, mainframes, and so on. The description includes usefulness advice, notes on special capabilities of each unit, warnings about repair/maintenance/alignment difficulties and the like.

For example, the reader is warned that the military version of the common Tek scope (the 545, I think) has no extra capabilities, many impossible-to-find parts such as handles and other cabinet parts, and is very difficult to work on compared to the civilian version because it was made to be serviced by the module replacement method.

There are NO schematics, particular maintenance hints or tricks. The description of how to clean a Tek scope tells about a bucket of water and warm air.

I'd be happy to copy the pages of your current Tek project for you.

(WANTED: for the 543: CRT shield, socket, mounting hardware, bezel and craticule. Restoring a cannibalized 543A.)

-- Roy --

Roy Morgan / Tech A-266 / NIST / Gaithersburg MD 20899  
301-975-3254 Fax: 301-948-6213 Internet: morgan@speckle.ncsl.nist.gov  
---

From ab4e1.com Tue Aug 23 23:55:05 1994  
From: adams@chuck.dallas.sgi.com (chuck adams)  
Subject: Sept QST '94

Gang,

Just got the Sept issue of QST.

1. Page 11. Regen rcvr by KJ6LC.
2. Page 12. Is that a Super-Pro rcvr on top shelf? What's on top of it?
3. Page 34. The S-meter from a Heath rcvr. Was it the same on used in the HW-12/22/32 series? Maybe Bryan, NU1N, is also a member of this group?

Just a quick note to see if you were paying attention.

dit dit  
Chuck Adams K5FO CP-60  
adams@sgi.com

From ab4e1.com Wed Aug 24 02:51:31 1994  
From: adams@chuck.dallas.sgi.com (chuck adams)  
Subject: Sept QST '94

Gang,

Just got the Sept issue of QST.

1. Page 11. Regen rcvr by KJ6LC.
2. Page 12. Is that a Super-Pro rcvr on top shelf? What's on top of it?
3. Page 34. The S-meter from a Heath rcvr. Was it the same on used in the HW-12/22/32 series? Maybe Bryan, NU1N, is also a member of this group?

Just a quick note to see if you were paying attention.

dit dit

Chuck Adams K5FO CP-60

adams@sgi.com

From ab4el.com Mon Aug 22 16:10:13 1994

From: lhalliday@creo.bc.ca

Subject: Seybold?

Any of our combined numbers going to be at Seybold in San Francisco, mid-September? Wanna get together?

I get back from England Sunday the 11th, am home 1 day, and am off to SF Tuesday the 13th. Groan...I'm then home another week, and am off to GrafExpo in Pittsburgh (anybody?).

My portable station for Europe is pretty well complete. I got a good deal on a Kenwood TS-120V (even worked some W6s on 20 with it Saturday afternoon), and a local dealer gave me a good price on a CW filter for it. The piece of paper that came with the filter said to refer to the radio's manual for installation information. The radio's manual said the filter was available and handy for CW operation, but declined further details. A few minutes study of the schematic and the radio's innards showed how to do it, and 5 minutes later I had a partially disassembled radio propped up on books emitting that characteristic pink noise sound of a tight CW filter...

The power consumption will kill any gel cell I'd want to carry around pretty quickly, so my first task (after checking in to my hotel :-)) is to visit somebody like Martin Lynch and scare up a 5 amp power supply. Preferably a cheap one.

73 from Burnaby,  
laura VE7LDH who wishes all this travel was on airlines who  
honoured each others' frequent flyer points

From ab4el.com Fri Aug 19 20:54:07 1994  
From: X90GALBRAIT1@wmich.edu  
Subject: Spicin' up the beast...

Greetings,  
A few days ago I saw some mention of an archive(?) with mods for the  
DX-100...how can I access this info?  
Also, does anyone know where to find that 120VAC bulb that glows whilst the  
plate power is applies? I've tried every hardware store and elec. distributor  
and all I can come up with is an entire assembly (neon bulb in a plastic case  
with the lens)...unfortunately this would interfere with the VFO dial on the  
ol' 100.  
What a great TX!  
73, Chris KA8WFC

From ab4el.com Tue Aug 23 14:25:19 1994  
From: "Carl P. Gottsmann" <kn6al@ecst.csuchico.edu>  
Subject: Subscribe.

Pse Subscribe KN6AL... :-)

Tnx.

.

From ab4el.com Mon Aug 22 17:44:24 1994  
From: don merz <71333.144@compuserve.com>  
Subject: SX-88 Anyone?

Feel like a drive to Salt Lake City?

There's a guy there named Pete Smith who has a TON of boatanchor gear that he  
is willing to sell cheaply. The prize of the group is a Hallicrafters SX-88.  
I think he'd take about \$1000 for it. Other stuff: HRO 50T1, NC183D, RME4350,  
SX62A and CE 100V. H esaid there's lots more.

But it's definitely pcik-up only. He won't ship. Interested? Call him at  
801-825-6731. He's a good guy to chat with too.

From ab4el.com Fri Aug 19 18:17:38 1994  
From: don merz <71333.144@compuserve.com>  
Subject: Test Gear and Docs

#### Radio Test Gear and Literature For Sale

CONTACT: Don Merz, N3RHT: 47 Hazel Drive, Pittsburgh, PA 15228  
412-234-8819 (weekdays, EST).

#### TEST GEAR

Heath VC-2 voltage calibrator covering .01v to 10v. Nice early Heathkit in excellent condition. \$18  
Precision 612 Tube tester. Metal case. One lever handle missing. Untested. With manual. \$16  
Micronta (Radio Shack) 22-203U VOM. Mirrored scale. 30K ohms/volt. With case and probes. As-new. \$11  
Mercury 1100 Tube Tester. Case is pretty beat up. With Book. \$9  
Simpson 555 tube tester. 1954. Tests 01As up through 7 and 9 pin miniature. Ratty lookg but works. With chart. \$19  
Zenith high voltage probe with meter built into the handle. Hardly used in the original box. 1000 volts and up. \$29  
Transvision TV Signal Strength tester. Rare Transvision-logo'ed piece. Nice and all original. \$27  
RCA Chanalyst. How does a piece of 35 year old test gear survive 35 years and still look brand new? This famous tester has 5 tuning eyes. It is all original and appears to be brand-new right down to the original cloth-covered test probes. WOW! \$89  
Supreme 333 "Standard Analyzer." Combination tube tester, VOM in wooden case. Looks near-new inside. Case is darkly stained and dirty. Untested. No manual. Tests only older types--no miniature tubes. Great antique look. With schematic dated 1935. Untested. \$29  
Measurements Corporation 79B Pulse Generator. Good working and looking WWII vintage test gear. Original manual. \$16  
Tektronix: These items are pictured and described in Stan Griffiths' excellent book SELECTING AND RESTORING A CLASSIC:  
81 plug-in (lets letter-series plug-ins work on 58x 'scopes) w/manual: \$17  
TU-7 plug-in test fixture for 53x, 54x 'scopes: \$29  
Silver 903 wavemeter with 3 coils: \$5

#### SAMS AWAY!

Sams Transistor Radio Manual set: TSM-1 through TSM-71 and number 92. Missing TSM-4 but otherwise complete and as-new. \$169/all  
Sams Tube Substitution Guides: 1970: \$4, 1971: \$4  
Sams Audio Amplifiers Service Manuals. Volumes AA-4 (1953) through

AA-9 (1957). Very good condition. \$59/all  
Sams Record Changer Service Manuals. Volumes RC-3 through RC-9, plus RC-11, and RC-12. \$39/all  
Sams Modular Hi-Fi Service Manual Volume 12 (1971) \$3  
Sams Photofact Annual Indexes. Each index covers all Sams photofacts, and all Sams publications from photofact #1 in 1946 through the year of the index. These are \$4 each. Years Available: 1975, 1976, 1977, 1978, 1979, 1980  
Sams Auto Radio Service Manuals. Volumes AR-7 through AR-10, plus AR-22, 25, 28, 29, 34, 35, 39, 57, 209, 237. \$19/all  
Sams (Radio) Photofact number 1: \$29  
Sams Photofacts numbers 3, 7, 8, 9: \$11 each  
Sams Photofacts numbers 15, 16, 17, 29, 40: \$5 each

#### BROADCAST RADIO AND TV LITERATURE AND SERVICE DATA

Motorola Auto Radio service manual set. Nearly complete starting with model 600. \$19  
GE Television Receiver Service Guide. Large format. Starts with 800-series sets (late 40's). Great "photo-index." \$8  
Magnavox Television Schematics/Parts List 1948-1953. Large Format. Photos of all Magnavox sets. Neat. \$8  
Alliance Tenna-Rotor Service Manuals:  
1-- Covers T-10, U-83, K-22, T-12, U-98, T-20, U-100, T-95, C-225: \$8  
2-- Covers ATR, DIR, HIR, F-4, T-10, U-83, K-22, T-12, U-98: \$8  
Channel Master Transistor Radio Service Manual. Covers 65xx series radios including 6505, 6511, 6512, 6514 and others. \$6  
1971 RCA Reference Book-pocket-size, good: \$3  
Instruction book for Sears Silvertone 682 radio/phonograph. As-new. \$3  
Knight-kit 5 tube AM radio assembly manual. As-new: \$3

CONTACT: Don Merz, N3RHT: 47 Hazel Drive, Pittsburgh, PA 15228  
412-234-8819 (weekdays, EST).

From ab4el.com Tue Aug 23 12:09:37 1994  
From: "Kevin L. Anderson" <kla@helios.augustana.edu>  
Subject: Trans-Oceanic (fwd)

This announcement of a soon-to-be-published book on the Zenith series of Trans-Oceanic radios was on the rec.radio.shortwave/SWL-L list. Just forwarding it in case someone is interested.

73 de Kevin, KB9IUA

----- Forwarded message -----  
Date: Mon, 22 Aug 1994 14:16:14 -0400  
>From: BBrown3394 <bbrown3394@AOL.COM>

To: "Kevin L. Anderson" <kla@HELIOS.augustana.edu>  
Subject: Trans-Oceanic

I just received the following info and I thought some of you might have some interest in it.

-----  
Schiffer Publishing Ltd. is pleased to announce the impending publication of:

The Zenith Trans-Oceanic: The Royalty of Radios by John H. Bryant AIA and Harold N. Cones, Ph.D. This definitive work, to be published in late 1994, details the previously untold story of the Zenith Trans-Oceanic, the world's most romantic and expensive series of portable radios. Long a companion of kings, presidents, transoceanic yachtsmen and world explorers, the Trans-Oceanic was also carried into battle by American troops in three wars. Its great popularity in spite of a very high price can be laid at the feet of several generations of armchair travelers who used the shortwave capabilities of the Trans-Oceanic as a window on the world. With access to the Zenith corporate archives and their long experience as radio enthusiasts and writers for both the popular and scholarly press, Professors Bryant and Cones present the engrossing stories of the development and use of the Trans-Oceanic throughout its forty year life. They present a wealth of never-before published photographs, documents and information concerning these fascinating radios, their collection, preservation and restoration.

If you wish to receive notification of the SPECIAL PRE-PUBLICATION PRICE, please send a self-addressed envelope to the authors at:

The Radio Professors  
P.O. Box 592  
Stillwater, OK 74076

From ab4el.com Fri Aug 19 11:25:10 1994  
From: "Kearman, Jim, KR1S" <jkearman@arrl.org>  
Subject: TV-4A/U Tube Tester: Price Reduction

Readers of Electric Radio may recall Walt Hutchens' mention of this item in the July 1994 issue. He said he'd only seen two, and that he didn't think any had ever been released to surplus sales. If Walt's only seen two, it's probably unusual enough to be called rare.

I'm offering one for sale. This TV-4A/U was made in 1952, and comes with the

tube data book. It's a pretty simple tester, probably only measuring emission. You set the parameters with a few knobs and a bunch of toggle switches. It's about half the size of a jumbo loaf of bread. Controls and meter are on one edge, tube sockets are on another. It runs from 110 VAC. It's painted in lovely two-tone brown. The case is clean with no corrosion, dents, etc.

There are plenty of tube testers around that will do a better job of measuring tube performance than this one. Although an inspection of the inside revealed no signs of damage, I consider this a collectible and am not

going to plug it in. Buy it, put it on the shelf and appreciate it.

Asking \$100 + UPS shipping.

Jim Kearman  
jkearman@arrl.org

From ab4el.com Wed Aug 24 20:12:35 1994

From: bwb%csrvcs1.triad.com%triada.triad.com@triada.triad.com (Bruce Bacon)

Subject: Vertical on a Tower?

First, apologies for asking this question on boatanchors, but I'm in a pinch and need some quick advice. Our company just erected a 120' tower to communicate via microwave with another building appx 8 miles away. I saw the new tower and asked the facilities manager if we had any form of emergency communication (no phone, no lights) and he replied no. Being a ham I had to propose that we put up a couple of amateur antennas on the tower "health and welfare communications". The long and short of it is that the company has purchased two Cushcraft Ringo Rangers (AR-270, 2 mtr/440 and an AR-10, 10 meters) and they will be mounted on the tower Thursday. The question I pose is this; Is there a preferred elevation at which to mount the AR-10? We cannot mount it on top, that's where the microwave dish is located. We've purchased two 100' rolls of Belden RG-8, so it's obvious they have to be mounted somewhat lower than 100'. We've already got the boom, a ten foot piece of 1" conduit bent in the form of a U to mount the antennas to. One more thing...Is there a preferred distance from the antenna to the tower? Don't think we could get much more than 4' away. We'll mount the ground-lvl ends of the coax on a box at the base of the tower. When testing, or during an emergency we'll patch into the feed line via a short piece of coax. Thanks for any help, and again my apologies to the group for a non-BA related question. Reply directly to avoid more non-BA traffic, if you please.

-Bruce Bacon (bwb@triad.com) KE6GLS

--

-Bruce Bacon (bwb@triad.com)

From ab4el.com Wed Aug 24 18:10:44 1994  
From: Chris\_Terwilliger-A229AA@email.sps.mot.com  
Subject: want- Heath Antenna relay

	Subject:	Time:12:41
OFFICE MEMO	want: Heath Antenna relay	Date:08/24/94

I believe Heath used to have one of these...I need one for my Marauder/Mohawk combo.

Chris  
AA7WD  
a229aa@email.sps.mot.com

From ab4el.com Wed Aug 24 18:51:28 1994  
From: Chris\_Terwilliger-A229AA@email.sps.mot.com  
Subject: want- Heath Antenna relay

	Subject:	Time:12:41
OFFICE MEMO	want: Heath Antenna relay	Date:08/24/94

I believe Heath used to have one of these...I need one for my Marauder/Mohawk combo.

Chris  
AA7WD  
a229aa@email.sps.mot.com

From ab4el.com Sun Aug 21 04:01:35 1994  
From: "Lee K. Gleason" <gleason@MWK.COM>  
Subject: Wanted

I just got a Hallicrafters SX-99 in a condition so good as to not be believed ! (thanks to Ed Gable, K2MP).

Thought I'd see if anyone on the list has a manual for it that they don't need, before I start checking with all of the mail order manual sources in the FAQ.

I'm also looking for suggestions for a reference book that covers the Hallicrafters product line.

Also still looking for a BC-348 in good shape, with an AC power conversion.

Lee K. Gleason N5ZMR  
Control-G Consultants  
gleason@mwk.com

From ab4el.com Mon Aug 22 13:59:24 1994  
From: Nothing in moderation...! <brewer@anarky.enet.dec.com>  
Subject: washing redux

Newsgroups: rec.radio.amateur.homebrew,sci.electronics,rec.radio.amateur.misc  
 Subject: XYL Reactions (snicker- Kodak moment) (was Re: IC-751A HF Transceiver)  
 Date: 19 Aug 94 02:56:31 GMT

In article <keith.35.0009023A@radio.nl.nuwc.navy.mil> keith@radio.nl.nuwc.navy.mil (Keith Kanoun) writes:

>In article <eaim084-1408941503350001@fl08ara003.comm.mot.com> eaim084@email.  
>mot.com (Steve Carlton) writes:

```
>>A friend of mine had a similar experience with a HW-101 which was sitting
>>in a garage in Florida for many years. It was full of dirt and cobwebs. He
>>took all the tubes out and put it in a dishwasher and washed it then
[....]
```

Actually, come to think of it... why not put the TUBES in the top rack? Get them all nice and spiffy clean... they're least likely to suffer from it, assuming they can't move much!

^^  
Careful! I can guarantee that when you open the washer, you'll likely have  
a bunch of shiny tubes with NO ID marking on them whatsoever! Even wiping  
a tube marking with a wet cloth ONCE, will remove markings!

I'd be careful of dial markings, meters, transformer dampness and other side effects.

And anyway, smart consumers know that dishwashers are for cleaning gun parts (thus the convenient small parts bins that some confuse with silverware holders) not radio equipment at all!

Best

/john  
wb5oau

From ab4e1.com Wed Aug 24 13:38:33 1994  
From: lakeith@wrdis01.robins.af.mil ( Larry CONTRACTOR Keith Mr.)  
Subject: Way to go, Walt!

August ER arrived here in the middle of Georgia, yesterday.

During my quick scan of the contents, the familiar name of Walt Novinger popped out at me..

Turning quickly to page 12, I read Walt's description of a pretty neat station controller for SWL's. Maybe I can get rid of the 11 speakers in my shack... 8-)

And, the article contains an excellent photo of Walt (just as I remember him) in front of a very neat SWL layout..

Way to go, Walt! Nice job..

73,

Larry, KQ4BY